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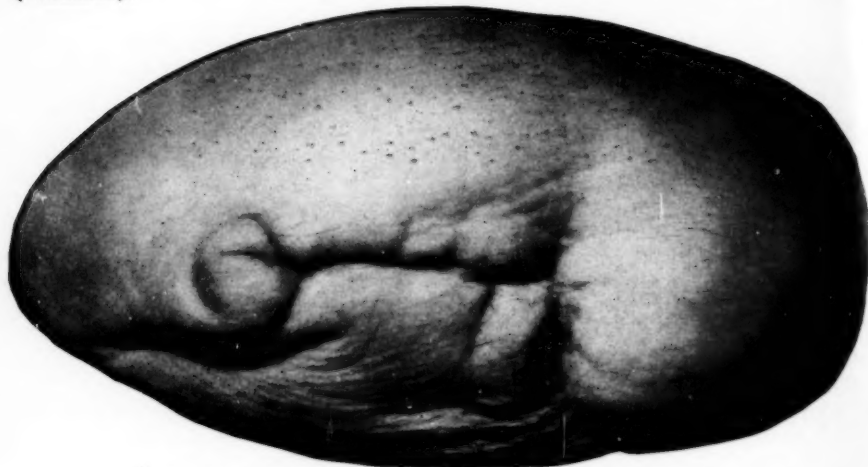
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Editorials

John Norris Evans, M.D., F.A.C.S.

It is a pleasure to announce that John Norris Evans, Professor of Ophthalmology in the Long Island College of Medicine, has accepted membership on our Board of Contributing Editors. Professor Evans will assume editorial sponsorship of the Ophthalmology section of our Contemporary Progress Department, taking the place hitherto directed so ably by Dr. Ellice Murdoch Alger.

The Care and Treatment of Our Ailing Medical Education

The study of disease, naturally enough, represents a large share of the activities of a medical school, yet it is an ironical fact that the syndrome from which the typical medical school itself suffers usually goes undiagnosed and neglected.

This medical school syndrome, fatal to what should be the aim of a faculty—the graduation of men and women properly qualified for general practice—is something worse, institutionally, than a combination of agranulocytosis, thrombo-angiitis obliterans and Paget's disease, clinically, in one and the same patient. Technically, the sum of its symptoms might be called the Flexner syndrome, the etiology of which traces to infection with the abrahamflexner bacillus.

The thanks of the medical profession are due to Professor Alfred C. Beck, of the Long Island College of Medicine, for his candid, well-considered and heartening discussion of this institutional ailment in his address at the opening of that school's fall term on September 28—a discussion characterized by intelligence, courage and clarity.

When the Flexner syndrome first seized the schools the baby was thrown out with the bath water; that is to say, both the good and evil in the old dispensation were discarded and a new régime initiated that has led straight on to the triumph of the laboratory bench over the hospital bed, to the dominance in the teaching picture of full time

men who do not practice, to the anomaly of preclinical instruction by academicians who are not even physicians (much less interested in the sick), and to the graduation of men and women trained as though they were going to be specialists or research experts—which very few of them will become—and thoroughly unfit to do general practice.

The dissatisfaction of the general public stems primarily from that public's frustration with respect to its medical attendants, and is a potent factor in the trend toward socialization. Such practitioners, since they meet none of the deeper requirements of patients, might as well be drafted for superficial and makeshift tasks pertaining to the lower orders *en masse*.

What good is a highly trained microscopist who finds thrust upon him the intimate personal problems of Johnny and his varicella, Mrs. Brown and her psychoneurosis, and Mrs. Black and her occipitoposterior?

So Beck demands that the colleges acknowledge as their major duty the training of young men and women for the practice of general medicine rather than the advancement of medical knowledge. The schools should seriously take over the function of the old time preceptors who have been obliterated by the glamour of research and specialization. In order to do this the schools will have to expand their clinical facilities until the absorption of the customary internship in their curricula is possible, and so keep their carefully selected students under their wings throughout the period of internship, graduating them with a seal of approval that shall mean exactly what the approval of preceptors once meant, and accepting them as qualified practitioners in their own hospitals, where they may continue to aid them as did the old preceptors.

Where competent general practitioners exist there is need for but few specialists; where they do not exist one sees cutthroat

competition—costly to patients in more senses than one—among specialists akin to the fratricidal war in Spain, and a total loss of the old relationship between practitioner and patient. The incompetent type of family physician is drawn into the malodorous set-up by the lure of split fees. The public looks toward socialized medicine. The hospital, cunningly profiting by the public's demand for a reduction in the cost of good medical service, practices institutional medicine in competition with the medical profession. So seethes the hell broth that was once good medical brew.

It goes without saying that such a plan as Beck's involves the choosing of faculties capable of training others for the actual practice of medicine, for study of the patient, as well as of his organs, for rectification of a shameful perversion of pedagogy, and for the honorable discharge of community obligations.

These are reasonable demands, considering the magnitude of the scandal; they can and should be met. Will the Long Island school lead off, we wonder, and achieve a unique educational prestige, or is the old abrahamflexnerian infection still too virulent—still too resistant to the antigens offered by a clear-sighted, wise and skilful therapist?

Shall Erasmian counsels prevail, or must some uncouth Luther storm the gates?

Just Before the Puerperium

Forty or more years ago a safety obstetric factor operated in a way not frequently duplicated today (and now more by accident than design). It was not the custom in those days for women of the more prosperous classes to enter hospitals for confinement; that procedure was expected more especially of women whose home (or home-less) conditions were such that they necessarily sought hospital care. Believe it or not, these women were admitted when they applied, usually, but not always, in the later months of pregnancy. They were taken care of on the medical side until they fell in labor, when they entered the maternity ward. The point that we wish to make is that for weeks before delivery these women were under direct observation, not visiting a prenatal clinic at comparatively long intervals. During the last week of gestation much can happen, as we all know from dramatic and sometimes tragic experience.

There was something wrong then, and

there is something wrong now. What was wrong then was the lack of prenatal supervision in the modern sense, although it must not be thought that the brethren in those days were not alive to renal and eclamptic and cardiac dangers; the Charles Jewetts of the period taught these things with a forcefulness and éclat that were everlastingly impressive. What is wrong now is an anticlimax of relaxed care after intensive prenatal work over a long period.

An ideal obstetric set-up would be complete intramural control of all patients at the end of their pregnancies for at least two weeks before delivery. A further lowering of maternal mortality would surely follow.

In the face of our crowded wards this may sound like an idle dream, an academic subtlety; yet there is truth in it of which the future may take account.

The Political Pandemic Abates

Once again comes the close of the emotional orgy known as a national election. The sham battle is over, with Punch and Judy completely exhausted. Ended is the ballyhoo, which a visitor from Mars might have supposed to mark a political scuffle between demagogues one of whom was a maniac and the other a moron.

After all, as Professor David S. Muzzey of Columbia University reminds us, ours is a government of laws and not of men; the Republic will endure, no matter who is elected; the Constitution will be adapted to the real needs of the hour, no matter who resides in the White House.

It is interesting to observe how, at such times, when off guard and not posing, the learned and staid seigniors of medicine sometimes shed their veneer and reveal the true intellectual stratum to which they belong. There are some good tests, and from the reaction to that section of the red-herring press notoriously geared to the minds of the lower orders of men one may infer much.

The effect of political campaigns upon the mental health of the general public cannot be wholesome. However, in many cases the recurrent social mania or mass psychosis which they excite may give some relief from the deadly boredom of most lives, less thrilling than lynching but serving to beguile minds not rich in cultural resources and either unwilling or unable to deal with basic issues.

Again the Liquor Problem

Only a courageous and adequate campaign of education concerning the truth about the hard liquor now marketed seems to stand between the country and another prohibition era. America is obviously not equal to a drastic and rapidly effective remedy—intelligent abstinence until a change in conditions is forced.

Temperance is not enough. Why temperate use of liquor that is not fit to drink in any quantity?

It is a pity that the Government cannot commandeer the wretched stuff, reimburse the owners, and then, with the widest publicity, offer it free and *ad libitum* to the drunkards of the country. Such a policy might either decimate the breed quickly or shame it into sobriety.

How Black Slavery Produced White Slavery

That Negro slavery was economically foolish was thoroughly realized by the slaveholders themselves and there are many expressions of this conviction recorded in the annals of the South. Thus the Marquis de Chastellux, writing of the attitude of the planters toward slavery, said that "in general they seem afflicted to have any slavery, and are constantly talking of abolishing it, and of contriving some other means of cultivating their estates . . . [They] complain that the maintenance of their Negroes is very expensive, that their labor is neither so productive nor so cheap, as that of day labourers, or white servants; and, lastly, that epidemical disorders, which are very common, render both their property and their revenue extremely precarious" (quoted by Blanton, in his *Medicine in Virginia in the Eighteenth Century*, from *Travels through North America*—Chastellux).

The poor physical stock from which many of the slaves were derived, their early superannuation, and the hazards that they offered to the owners from many standpoints, despite the very best of care, combined to label slavery "economically foolish."

Aside from the disease hazard, there is another medical angle from which the institution of slavery may be gauged as carrying punitive weight against the white ownership. Blanton, in the work cited above, calls attention to the practice of wetnursing by Negro women of the children of their

white mistresses, and to its effects. The white mothers bore many children, while the wetnurses bore few. We conclude with the following passages from Blanton's work:

The *Virginia Argus* carried this advertisement in 1804: "Wanted to hire or purchase a wet nurse without a child of her own." Philip V. Fithian, the Yankee tutor at Nomini Hall, had his eyes opened to this Virginia custom one night at supper. Afterwards he recorded in his diary: "I was introduced at dinner, to Dr. [Walter] Jones, a practitioner in Richmond [County] . . . Dr. Jones supped with us and is to stay the night. The conversation at supper was on Nursing Children; I find it is common here for people of Fortune to have their young Children suckled by the Negroes! Dr. Jones told us his first and only child is now with such a Nurse; and Mrs. Carter said that wench has suckled several of hers. Mrs. Carter has had thirteen children . . . and she has nine now living." She had four more after the time Fithian wrote.

The Negro wet nurse was an important adjunct to the nursery in that day of large families. Year after year the fruitful Virginia wives gave birth to a long line of heirs, and only a high mortality kept the household within bounds. Thomas S. Dabney's second wife, who was sixteen years old when he married her, bore sixteen living children and for thirty years was never without an infant in arms. Hill Carter of Shirley had seventeen children, of whom three were still born, four died the day of birth and two others in early childhood. Charles Carter's two wives had twenty-three children. William Massie's fourth wife had ten, and the wife of John Selden of Westover had eighteen.

The strain of such frequent pregnancies must have been very great. Nursing their own children became almost impossible, and the Virginia mothers quite naturally turned to Negro wet nurses. How much of infant care was delegated to these nurses and to Negro mammies is difficult to learn, but there was probably rather more of it than was good for the babies. Poor infant feeding was probably one of the large factors in the mortality noted in early life among both whites and Negroes. Early weaning and the pretty general use of the wet nurse were doubtless responsible in part for the high birth rates, for in cutting short the period of lactation women sacrificed one of the best contraceptives.

Medicine as Seen by an Anthropologist

Hooton, Professor of Anthropology at Harvard University, in his Tercentenary address charged medicine with responsibility for the obsolescence of natural selection, and for humanitarianism. Thus statistics of infant mortality show that the constitutional inferiors of today stand a much better chance of surviving to adult years and of reproducing their kind than they have presumably enjoyed at any previous time. Modern advances in sanitation and in the knowledge of communicable diseases have done much to control the epidemics which periodically have decimated the populations of times past. The consequences are obvious. Familial care and earnings must be distributed among a greater number of less fit young. The less fit they are the greater the tendency to dissipate the family resources upon them. The major portion of parental energy is ex-

pended in efforts to make the best of bad reproductive jobs. The superior offspring are neglected and become delinquent. Thus the benevolent and highly efficient labors of modern medicine are raising new and grave problems.

"By super-skilful tinkering and patching, life and activity are maintained and the animal continues to exercise one of its strongest instincts and to produce more and more of worse and worse offspring. The pathway of human evolution, like hell, is paved with good intentions—medical, educational and ethical. The fallacy of social ethics lies in the assumption that all human life is inherently good and worthy of preservation, and that by a process of environmental tinkering, fools may be transmuted into sages, criminals into saints and politicians into statesmen. Surely this conception is nothing but a secularized belief in conversion and personal salvation. The clergyman of yesterday is the unfrocked sociologist of today."

The remedy is "a society in which there is not only marked dominance of the more intelligent individuals, but also the subordination of the individual to the social good, a clear conception of evolutionary history, a knowledge of the measures whereby evolutionary defects might be eliminated and gains consolidated, and the social sanctions to put such measures into effect." This gives only a hint as to what would be specifically required of medicine by such a society. From the point of view of this medical generation some of the requirements would be terrible. These things are in the future. Will medicine, in that future, be a very different thing from what it is today? And are we to assume that the anthropologist cannot change?

"Promoting" the Consumers' Cooperative Movement

The plans of the Cooperative League involve the socialization of medicine. One of the aims of the outfit is the furnishing of medical care to cooperative consumers. Thus it is easy to understand the interest of the American Association for Labor Legislation in the movement, for the record of that organization in propaganda for socialization is familiar to the medical profession. Many forces are joining to promote the cooperatives, including representatives of the Government. The latter circumstance seems odd, in view of the fact that the basic phi-

losophy of the movement predicates the ultimate junking of the political State.

We have pointed out at length before (*MEDICAL TIMES*, 63:354 November, 1935) what the shortcomings of the type of medical service inevitable under such a system would be like. Briefly, it would work out as a wretched bureaucracy of the anthill brand, with a worse than mediocre quality of medical service, no free choice of physician, and no possibility of an intimate personal relationship between doctor and patient.

Thoroughly established, the idealism behind much of the movement would be scrapped and it would merely serve as "a means of helping low-paid workers to exist on a mere pittance."

We should say that this so-called consumers' cooperative movement is rapidly reaching a point where it will fall under the control of the Big Bad Wolves of a more cunning capitalism and of the State. The idea that it will be permitted to undermine and destroy the State is simply a preposterous dream of starry-eyed uplifters, evangelists and "socialicians."

EXPERIMENTAL PRODUCTION OF MALIGNANT GROWTHS IN MICE BY ESTROGENIC CHEMICALS

WILLIAM U. GARDNER, GEORGE M. SMITH, LEONELL C. STRONG and EDGAR ALLEN, New Haven, Conn. (*Journal A. M. A.*, Aug. 29, 1936), state that the rôle of chemical stimulation in the development of mammary tumors postulated clearly by Loeb in 1919 has been demonstrated experimentally by several investigators. The present report summarizes additional experiments on the effect of several different chemical stimulants (estrogenic hormones) on the development of mammary carcinomas and of subcutaneous sarcomas in three different strains of mice. One or two estrogenic chemicals were injected for periods exceeding 125 days into 126 mice of three strains as follows: eighty-six mice of the A strain, twenty-seven mice of the C₃H strain, and thirteen mice of the CBA strain. Twenty-eight mice developed one or more mammary carcinomas and seven more developed spindle-cell sarcomas as local reactions in relation to retained oil cysts at the sites of injection. Mammary cancers developed in male mice receiving theelin, equilin benzoate, keto-estrin and hydroxyestrin benzoate.

COMPARATIVE STUDY OF THE HUMAN BLOOD GROUPS IN RELATION TO CERTAIN IMMUNOLOGICAL REACTIONS IN A GROUP OF UNIVERSITY STUDENTS

HILDRUS A. POINDEXTER, M.D.

Washington, D. C.

THE discovery of the circulation of the blood by Harvey in 1616 opened up a new field of research. Following this discovery many transfusions of blood were made from animal to animal and in 1667 Denys and Emmerez made a transfusion from a lamb to a man. During the two hundred and fifty years that followed the first intravascular transfusion of blood to man there were many animal to animal transfusions and some animal to man transfusions, and a few man to man transfusions. The much too frequent and severe reactions following transfusions and the lack of understanding of the blood incompatibilities made transfusions inapplicable in clinical medicine.

In 1900, Landsteiner⁽¹⁾ showed that even the serum of a normal person may agglutinate and hemolyze the cells of another normal person when mixed in vitro. Landsteiner suggested that a similar reaction might occur in vivo upon the intravenous transfusion of these incompatible elements. Offering this as a possible explanation of the severe and sometimes fatal reaction experienced following a transfusion, Landsteiner dispelled the idea that the reactions were due to a condition of disease in the donor.

Landsteiner⁽²⁾ observed that individuals whose bloods did not agglutinate each other fell into certain groups, and that transfusions within a particular group were safe as far as incompatibility was concerned. On the basis of these observations Landsteiner discovered the first three distinct blood groups, designated at present as O, A, and B. One year later Von Decastello and Sturli⁽³⁾ found the fourth group, now designated as

AB. The value of the knowledge of the compatibility and incompatibility of certain blood groups, the knowledge of the technique of determining these groups, and the safety with which compatible blood of normal persons could be used for transfusions were immediately recognized by physicians.

As transfusions became safer there was a corresponding increase in the practical indications for transfusions. There was an increase in the application of convalescent sera-blood from convalescent donor and immunotransfusion in disease as shown by Zingher⁽⁴⁾ in 1924, Stephenson⁽⁵⁾ in 1933, Gordon⁽⁶⁾ in 1933, Lyons⁽⁷⁾ in 1935, and others. The indications have changed from that of restoring blood volume and that of combating certain types of anemia to include many types of anemias, blood dyscrasias, acute and chronic infectious diseases, and general debilities, and to stimulate lethargic body defense centers.

It is noted that transfusion may not only supply a fresh supply of healthy red and white blood corpuscles, but also certain bacterial aggressins of leukocytic origin, fresh opsonins and their more active bacteriotropins. In many cases of streptococcus infection in which immunotransfusion along with the specific antitoxin is used, the results are much better since the toxin not only is neutralized but restored phagocytic action effectively blocks further invasion and proliferation of the organisms. Compatible blood groups are now being used also where practical for skin grafting when the area of the skin to be covered is sufficiently large to require skin from another person.

The knowledge brought forth by Ottenberg and Epstein⁽⁸⁾ in 1908, by Von Dungern and Hirsfeld⁽⁹⁾ in 1910, by Bernstein⁽¹⁰⁾ in 1925, by Kiriara and Haku⁽¹¹⁾ in 1927, by Landsteiner and Levine⁽¹²⁾ in 1928, and by

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Bauer⁽⁶⁾ in 1928 showed that the isoagglutinogens responsible for the grouping were inherited. The observations of these investigators have shown that not only do the major isoagglutinogens A and B follow the hereditary law of Mendelian dominants as independent factors, but the subgroup also follows laws of heredity. This information has been used by geneticists, anthropologists, and those interested in medicolegal problems in a variety of ways.

In recent surveys made to determine the degree of latent epidemization, it was observed that the presence of certain antibodies in the blood varied in different blood groups. With respect to acute anterior poliomyelitis, the virucidal, virus neutralizing or virus reproduction inhibiting power of convalescent sera varied in different groups. The variations in some cases were large enough to be significant. The explanation of the lack of immunizability or the ability to retain immunity observed in certain individuals is not known. Among the theories may be included the consideration that some individuals belonging to specific groups do not have cell receptors open to certain animate agents of disease. In such instances the organism of the disease is only superficially attacked and does not stimulate the centers necessary for the production of a real, lasting defense. A review of 578 cases of acute anterior poliomyelitis, by Jungeblut and Engle⁽⁷⁾ and Jungeblut and Smith,⁽⁸⁾ occurring during the 1931 pandemic, showed that practically none were of Group B. This suggestion of some natural immunity in persons of Group B was proved when the pooled blood of Group B normal persons showed a much higher poliomyelitis virus neutralization titer than the pooled blood of Groups O and A. These observations would suggest that convalescent sera or immunotransfusion in poliomyelitis be made from Group B individuals where compatibility will permit.

It has been observed by Poindexter⁽⁹⁾ that in rats whose cells were agglutinated by human serum of Group A there was a less fulminating course following experimental infection with fully virulent *Trypanosoma equiperdum* organisms. In rats whose cells did not possess the hetero-agglutinin against human Group A sera there was the usual rapidly fatal course upon *Trypanosoma equiperdum* infection.

We believe the serological evolution is a part of general organic evolution. There are

developed in normal persons certain organs and their products which may mature at different ages and manifest themselves even without specific artificial stimulation. Under this group may be listed the menstrual cycles of puberty, the occurrence of certain virus reproduction inhibiting factors in the serum of monkeys during these cycles, and the stabilization of blood groups at certain ages. These various serological and endocrinological phenomena appear at various times. This period, which is equivalent to the immunological crisis, is the time at which the serogenic organs of the person become sufficiently irritable or sensitive to stimuli to be immunizable. There is a significant linkage between this irritability and certain blood groups with respect to certain diseases. It is interesting to note that the establishment of the definite blood group about the age of two years is the period of greatest susceptibility to diphtheria. The greater prevalence of diphtheria at about five years of age is not due to the fact that this is a much more susceptible period than the two year period but the exposure at this age is greater with only a slightly lowered susceptibility from maturation immunity. From the age of two years up, the immunity progressively increases even without a history of inoculation or an attack.

According to Tamaki,⁽¹⁰⁾ Komine and Nihei, children of blood groups O and B are more easily immunized by the injection of toxoid than children of Group A or AB, but when children of Group A and AB were successfully immunized by repeated injections, the immunity persisted longer than with Groups O or B. Clinical observations show that children of Group A who get diphtheria suffer more from a deficiency of diphtheria antitoxin production. They may show a Schick positive sooner after convalescence than persons of Groups O or B.

Hirsfeld,⁽¹¹⁾ Hirsfeld and Brokman have observed that offspring appeared to inherit the ability to easily become Schick negative or to remain Schick positive in proportion to whether their parents were Schick positive or negative. The property of antitoxin production or ease of immunizability to diphtheria seems to be associated with the inheritance of the isoagglutinogens.

In the study of normal hemagglutinins in fowls, chickens failed to respond to immunization with foreign blood cells until they had spontaneously developed some agglutinating capacity for the particular red cells

in question. In this case, it would appear that a specific antigenic stimulus is effective only when the particular antibody-producing mechanism concerned, which Hirszfeld refers to as the particular biochemical reflex, has already become established in the course of the animal's ontogeny. An analysis of certain phenomena in man in regard to his response to bacterial antigens and their corresponding antibodies and to the more definitely established and stable normal hemagglutinins and hemolysins in adults shows that an analogous relationship holds true in man in regard to the ontogenetic development. This has been demonstrated by Zingher⁽¹⁰⁾ and others using the Schick test as a criterion of the presence or absence of diphtheria antitoxin in the body. Hirszfeld⁽¹¹⁾ believes that some of the morbid conditions in the mother and child may be explained by incompatibility in their blood groups. He further states that in heterospecific pregnancies which go to term, the morbid process may result in a newborn of less than the average weight of those of the homospecific pregnancies.

Even though we believe that susceptibility to certain diseases is inherited along with constitutional make-up, it is hard to attach this susceptibility or immunity definitely to any particular pair of chromosomes such as may be associated with the genes A, B, or R. We must remember that with the twenty-four pairs of chromosomes in man there are a large number of possibilities of attachment.

From the as yet incomplete data of several Russian observers it would seem that individuals of Group O are less likely to contract malaria than are those of Groups AB or B. This observation may also be of value in the treatment of general paresis by malaria fever therapy.

Realizing that more knowledge about the relationship of blood groups and immunity is needed, we are including here some observations made at Howard University over a period of five years. We have included in these observations only students registered in the medical, dental and pharmacy schools, and for two years, the nurses of Freedmen's Hospital. A few younger members of the faculty appear in this study. Since the majority of these students are colored, we have confined our study to the colored students and certain faculty members. The fact that

they are all young adults means that any maturation development is complete and that the blood group is stable. They were all in good physical health at the time of the various tests. Two hundred and eighty individuals were included in this study and were divided into blood groups in the following proportions: 52 per cent in Group O; 32 per cent in Group A; 14 per cent in Group B; 2 per cent in Group AB. The Mantoux test was done on 204 of the total number, with 86 per cent positives. When the tuberculin reactions were analyzed according to blood groups, the positives were as follows: 85 per cent in Group O; 83 per cent in Group A; 84 per cent in Group B; 100 per cent in Group AB. Since only 2 persons in Group AB were tested, the 100 per cent positives can not be considered as of any different significance than the others. From these observations we find that there does not appear to be any significant difference in the various blood groups in regard to positive tuberculin reaction. The 86 per cent positive tuberculin test is lower than is generally found in the average adult Negro population in the large cities. In addition to many other factors contributing to a lower incidence may be mentioned a more selected group and the fact that many of the students come from small towns or rural areas.

Schick tests were done on a total of 183 individuals, of which 81 per cent were negative. We used the Schick negative here for analysis since it represents immunity and is a larger figure for comparison. Of those on whom the Schick tests were done, 48 per cent were in Group O, 33 per cent in Group A, 15 per cent in Group B, and 3 per cent in Group AB. 73 per cent of Group O were Schick negative, 76 per cent of Group A were Schick negative, and 89 per cent of Group B were Schick negative. Of the 6 individuals of Group AB tested, all gave a Schick negative reaction. Even after due consideration is given to the probable errors in each case, there still is a significant difference between the Schick negative in Group O and Group B individuals. Special attention is being given to the nurses who gave a positive Schick test. They are being injected with toxin-antitoxin for active immunization. The re-Schick tests at 6 months and 18 months after the last immunizing dose may show whether the members of the various groups respond with a significant difference after artificial im-

munization and whether after being once immunized they hold that immunity longer as shown by the Schick test.

Smallpox revaccination was done on 153 individuals. They were divided according to blood groups as follows: 46 per cent in Group O, 33 per cent in Group A, 19 per cent in Group B, and 2 per cent in Group AB. All of these were revaccinations. Most of the individuals had been previously vaccinated more than once; once in early age, and again in high school or college. The reactions were 13 per cent primaries; 33 per cent accelerated, and 52 per cent immediate. There were two individuals or 1 per cent who did not give a "take." The reason for these two negative reactions is not known since the same batch of vaccine was used on them as was used on the others who got various types of positive "takes." We used the multiple pressure method on all individuals in this study. When analyzed according to blood groups they were as follows:

31 per cent of Group O were primary; 39 percent accelerated; 29 per cent immediate; 12 per cent of Group A were primary; 45 per cent accelerated; 42 per cent immediate; 14 per cent of Group B were primary; 33 per cent accelerated, 53 per cent immediate. Of the 3 persons in Group AB, all gave an immediate reaction.

In attempting to analyze the significance of these results the factor of time interval which elapsed between the date of the last previous successful vaccination and this latter one was given consideration. It was found that even with approximately equivalent time intervals the difference between the primary "takes" in Group A and B was about the same but they differentiated significantly from the primary "takes" in Group O. It appears that Group O does not hold its immunity to smallpox as well as the other groups.

The Dick test for susceptibility to scarlet fever was done on 41 of the nurses. 67 per cent showed negative reaction. The group was too small for any definite conclusions. When analyzed according to blood groups, the differences were not significant. In some cases, the differences were less than the probable error and in no case was the difference equal to two times the standard deviation. In general, however, the individuals in Group O showed a greater percentage of positive Dick reactions and were,

therefore, probably more susceptible to scarlet fever.

Either by test or by history 39 per cent of the 41 nurses in the study were hypersensitive to some food, pollen, or drug. Only two were sensitive to drugs; the others showed allergies either to strawberries, tomatoes, or pollens. The percentage sensitive to tomatoes and strawberries exceeded those sensitive to pollens. Exclusive of those hypersensitive to drugs, 69 per cent of the remainder who were allergic were in Group O, 23 per cent in Group A, and 8 per cent in Group B. There was only one individual of this series in Group AB. She showed no hypersensitivity. These observations differ from those of Dyrenforth (21), who, considering chiefly those of the hay-fever, asthma, and urticaria categories found only 12 per cent in Group O. He did not, however, do a skin test for hypersensitivity. Even when an allowance was made for the small number in our series, Group O still showed a significantly greater percentage of hypersensitiveness than the others. The relationship between hypersensitivity and immunity and the relationship of atopic allergies to heredity not being settled, one hesitates to venture an explanation for the greater percentage of hypersensitivities in a group in which both dominant isoagglutinogens are absent—Group O. We can say that if hypersensitiveness is hereditary, it certainly is not a pure Mendelian dominant.

From these observations it appears that individuals of certain blood groups show a greater ease in responding to antigenic stimuli than others, and that some of them hold immunity better after acquiring it. It also appears that a form of maturation immunity or of latent epidemization is significantly present in certain blood groups.

Any attempt to correlate immunity or immunizability with any blood groups must be individualized in so far as the disease in question is concerned. Individuals of a particular group who show comparatively marked protection against one disease may also show comparatively marked susceptibility toward another.

I feel that when it becomes possible for the average technician to determine not only the various major blood groups and their immediate subdivisions but also the M, N, and P factors and make these data a part of morbidity and mortality studies along

with the etiology, some valuable correlations will be possible. While it is impossible to draw any definite conclusions from this study, we are submitting this as accumulative data so that, as observations from other sources are added, some light may be thrown on the relationship of blood groups to immunity.

We have in progress in the Department a study on the distribution of blood groups in all typed cases of pneumonia in the hospital with histories. If and when a sufficient series is obtained, it may be possible to correlate blood groups with susceptibility to certain types of pneumococcus and with fatality from these various types. Similar studies on the morbidity of common colds are in progress here.

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THE PHARMACOPEIA AND THE PHYSICIAN: INTRODUCTION TO SERIES OF ARTICLES ON USE IN THERAPY OF PHARMACOPEIAL SUBSTANCES

WALTER A. BASTEDO, New York (*Journal A. M. A.*, Sept. 5, 1936), emphasizes that fundamentally the physician is a therapist, for he must treat his patients. In his therapeutic armamentarium drug remedies assume a large importance. It follows that any method for the selection of the best drugs and the establishment of standards to ensure their quality, purity and strength must appeal to him. Hence his interest in the Pharmacopeia. A series of therapeutic articles is being prepared for publication in *The Journal*. It is sponsored by the U. S. Pharmacopeial Convention through its Revision Committee, in cooperation with the editor of *The Journal*. Each subject is to be dealt with by one or more authorities, and the emphasis throughout will be on methods of treatment. The physician has a twofold interest in the Pharmacopeia. Its standards for the drugs and preparations that it recognizes become legal under the Food and Drugs Act, and as a consequence the prescribing of its drugs and preparations gives the physician the best assurance that these will have the quality, purity and strength

desired. The physician who prescribes U. S. P. remedies can rely on their quality and their applicability in therapy. If he prescribes patented articles he may be chagrined by discovering that his patients renew their prescriptions and treat their acquaintances by buying his prescribed articles by name over the druggist's counter. The physician may inquire why a number of recently introduced remedies of high merit are not in the Pharmacopeia. The reason is that they are patented. The pharmacopeia cannot adopt legal standards for a patented article, for the patentee is the sole arbiter for the standards of his patent. The new remedies of this class are given full consideration in the American Medical Association publication *New and Nonofficial Remedies*. If still deemed worthy when their patents expire, these drugs may receive prompt pharmacopeial standardization through the issue of "interim revision supplements" to the Pharmacopeia, instead of awaiting the next complete pharmacopeial revision ten years hence.

By securing the American Medical Association's latest editions of "Useful Drugs" and the "Epitome of the U. S. Pharmacopeia and National Formulary," he can review the titles and scope and be sure that he is presenting the latest official drugs and preparations.

TRAUMATIC PSYCHOSES AND NEUROSES

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THE following description does not lay any claim to originality but purports to be only a review of the recent literature on the subject. Acknowledgment is made to numerous authorities from whose work many theories and modes of investigation have been liberally borrowed. This article is chiefly written with the hope that it may clarify the confused state of mind of the general practitioner in regard to some of the fundamental approaches to the subject in the light of present-day knowledge. In view of the vast importance of trauma in general and medicolegal practice it is felt that this subject is timely and one that requires fuller discussion and more widespread study than in the past.

Primary Concepts

The term traumatic psychosis is applied exclusively to psychoses following a head injury. Should the psychosis develop as a result of an injury elsewhere it is called a psychoneurosis, or the old term of traumatic neurosis, as the psychological mechanism here is recognized as an indirect one. However, it must also be recognized that the term traumatic is also an assumption to correlate a head injury with mental changes occurring later on. A. Meyer has stated that "even in primary traumatic disorders, i.e., those that follow the injury immediately, constitutional peculiarities exist." Heredity, alcoholism, syphilis, psychopathic traits, depressions, and in fact one or other of the usual predisposing causes of mental disorders are found in the anamnesis. The earliest classification of A. Meyer included the following four types in 1903:

- A. Traumatic delirium
- B. Traumatic constitution
- C. Posttraumatic enfeeblement
- D. Other types

The diagnosis has been restricted to those showing mental changes as a result of a brain or head injury following force applied directly or indirectly to the head. However, throughout the literature is expressed

a great deal of uncertainty concerning the relation between the applied force and the subsequent action upon the brain. As Wechsler has pointed out, "It is well known that a person may receive a severe blow to the skull and sustain no fracture or injury to the brain; he may receive a comparatively light blow and sustain a fracture of the skull as well as injury to the brain; he may sustain fracture and no brain damage, or have no fracture and severe brain damage. A person may even receive no direct blow and still suffer grave cerebral damage." Hengstler describes the following examples: "In the consideration of what actually happens to the intracranial contents, one must learn two vitally important facts:

1. A very bad injury may occur without a fracture of the skull
2. Extensive skull fractures may take place without any actual damage to the brain or its coverings."

As Allen has stated, "Let us remember that we are interested in the amount of brain damage and the presence or absence of a fracture of the skull is largely of importance from the amount of brain damage it may produce at present or in the future." The majority of cases developing psychoses do so in the first year, but some develop them at the end of 5-10 years. In about one quarter of cases there was no period of unconsciousness, while others give a history of unconsciousness of a short period of a few moments to 6 weeks. About one half the cases have a history of a fractured skull. It has also been shown that the factor of over-indulgence in alcohol has a definite relationship both as to the causation of the accident and the adaptation of the patient after he leaves the hospital. The adaptation is consistently on a lower level in the cases in which alcohol is used.

Causative Mechanisms

In this paper it is chiefly the delayed effects which will be discussed. The immediate

diate lesion consists at first in focal tissue destruction, hemorrhage and edema. Later there is secondary degeneration and the formation of scar tissue. Diffuse effects of the same kind are also commonly produced with scattered minute hemorrhages and edema. Diffuse destruction of nerve tissue can occur in parts not directly affected by the injury, as it has been shown that diffuse fragmentation of the myelin and alteration of the nerve cells can occur from cerebral commotion.

The number and importance of these nervous states following trauma seem to be increasing with the widespread use of machinery and transportation. The conflict is still being waged as in the past between the exponents of the so-called organic and functional interpretations of these conditions.

Posttraumatic neuroses do not differ in any essential way from nontraumatic ones. Most of them fall into one of two groups: those exhibiting the symptoms of posttraumatic neurasthenia and those presenting the picture of posttraumatic anxiety neurosis. The syndrome of the first is well described as posttraumatic irritable weakness and emotionalism; the second as exhibiting anxious hypochondria with excessive sympathetic stimulation.

Hysteria is perhaps the most common of the functional nervous conditions seen after trauma. These patients show pseudo-organic—usually neurogenic—signs and symptoms such as blindness, paralysis, anesthetics and disturbances of motion and gait. In this group an abnormal degree of suggestibility is present.

In the posttraumatic neuroses the peculiar emotional state of the patient is almost diagnostic. It is a combination of fear of disability, resentment toward the agent responsible for the injury, and toward anyone, such as a doctor, for suggesting that the injury is trifling or negligible, and a persistent attempt to prove that the injury is real. Experience with these patients makes it obvious that they suffer largely from emotional and psychological difficulties, rather than physical ones. In studying the history, one is impressed by the evidence of marked neurosis and ineffectiveness of personality. It is well known that great numbers of patients who have received extensive injuries do not develop a neurosis, while in others the slightest injury tends to precipitate a severe nervous state. The psy-

chological basis for the breakdown was present; the injury served merely as a precipitant. It is thus necessary to understand the psychological makeup and the relation of the environment of the individual to treat these cases. Such studies inevitably lead to the study of the childhood, early home conditions, and formation of undesirable habits in early life. It is folly to antagonize the patient by arguing, although it may be necessary to deny a physical injury, but one should not insist that he has no real symptoms. Efforts should be made to reestablish the patient as early as possible in some kind of work in which he can effect a transfer of his attention from himself to other interests. One must be careful to give an excuse for his recovery. Medication is helpful in giving him a reason for his recovery. Physical therapy can likewise be used.

Israel Strauss and Nathan Savitsky of New York City state that the recent tendency to deny compensation to persons considered neurotic forces to the foreground the differentiation of the neuroses following trauma from results of injury to the intracranial contents. This now becomes an important and practical issue. The increasing knowledge of what occurs following blows to the head from anatomic and physiologic standpoints and the remarkable recent additions to the armamentarium of diagnostic aids now permit a fairly accurate determination as to whether or not there are sufficient organic changes to account for the patient's symptoms. Since the War so much emphasis has been placed on the necessity for psychological and social investigation following accidents that adequate neurological examination is frequently relegated to the background. The nature of posttraumatic fatigability has interested experimental psychologists intensely, and methods borrowed from the laboratories of the latter may be an aid in solving some clinical problem. The intelligence tests, the Binet-Simon, and the Pitner performance test are of little value in the absence of a previous record of performance. Any complaint of poor vision justifies investigation. Such workers as McCullough, Gelb and Goldstein, and Paschef have shown the frequent diminution of the visual fields and the presence of annular scotomata, and have assumed them to be the result of cerebral injuries about the occipital lobes. In a similar way otoneurological investigation is stressed. Groves found that 31 of 42 patients

with head injury had some degree of deafness, although 12 could have passed for persons with normal hearing.

Psychical Concepts

Before the complaints of a patient with a blow on the head can be dismissed as insignificant or psychogenic, he should be subjected to a coöperative examination. Negative results on neurological examination and a normal mental status are no final criteria of the presence or absence or the degree of brain damage following trauma. Besides the gross lesions giving rise to focal changes and due to extensive laceration of brain tissue, many finer tissue changes have been described as an explanation of the vaguer complaints of patients with head injuries. In most cases there is a subtle interaction of psychic and organic factors. The result is not the sum of the interaction of these biologic forces, since psychogenic factors always complicate the clinical picture if the socio-economic and other difficulties last long enough. Failure to understand a clinical phenomenon is no clinical proof of its psychogenicity. Ross has attacked this matter from a similar angle. He states that every paper he has read emphasizes the neurological findings and search for demonstrable organic changes. He stresses that the mind is a delicate machine. There are present remnants of the primitive archipallium over which specializes the more advanced neopallium. This control is more in the nature of refinements of inhibition and correlation or association. In the humble lizard, for example, there exists a type of sensorium. He recognizes where his food is to be found and orients himself with relation to it. He also has a storehouse of memories and profits by experience to a limited extent. He exhibits reactions to emotions of rage, fear, etc. There is even the beginning of judgment in the selection of prey and the timing of attack upon it. With the addition of the neopallium, all these primitive functions are vastly extended and refined. The primitive reactions in each sphere are inhibited and largely directed by the neopallium. Every psychiatric worker is aware of the vigor of these primitive reactions. In times of crisis they assert their power and throw off much of the higher inhibitory forces or control. The refinements of the neopallium are of a more delicate nature and require a nicety of timing and a vast amount of association. It is because of this complexity that the mech-

anism is easily thrown out of control. In any state of mental derangement we see fragments of the higher functions mingled with the primitive instinctive outbursts freed from their usual inhibitions. It is so with concussion. There is a marked emotional disturbance with any major head injury. This would seem to be sufficient to disrupt the delicate machinery of the mind in conditions of concussion without any demonstrable brain injury. When a concussion patient recovers consciousness and senses even vaguely that he is out of control, this must cause excessive anxiety and terror. This state hinders the normal resumption of control. This must have an important bearing on the good results noted in the large number of cases which for a time seem so seriously damaged.

Clinical Symptomatology

The symptomatology of head injuries has not been studied as intensively from the psychiatric as the neurological point of view. Paul Schilder's study based on 35 cases selected at the Bellevue Hospital is interesting. Serious trauma was evidenced by the x-ray showing a fracture or spinal puncture with evidence of subarachnoid hemorrhage. Following the state of unconsciousness, there was often a state of deep clouding of consciousness and general resistiveness, which was partly psychic and based on organic neuromuscular components. In the next state a profound disorientation for space and time with, at times, marked bewilderment and helplessness, was present with the clouding of consciousness. In this state perception was retarded and there was difficulty in the synthesis of primitive impressions in a unit, and the general function was deeply impaired. Memory and judgment were both impaired, especially the memory for recent events. It is probable that the clouding of the consciousness, the perceptive difficulties, and the disturbances in the gestalt function are partly independent of each other although they are closely related.

This psychic disturbance may be of brief duration, but on the other hand it may last for weeks or it may develop after a free interval. When it subsides, frequently the picture of a Korsakoff psychosis remains. The absence of the clouding of consciousness is the characteristic feature here; perceptive and gestalt disturbances may be present or absent. The confabulations are not always synchronous with the memory distur-

ances and may be present when the memory has returned. The memory disturbance is chiefly one of retention, and the impairment of judgment involves chiefly the correlation of the material of memory. Alcoholism is not a necessary factor in the genesis of traumatic Korsakoff's syndrome.

The content of thought that appears in the confusional state is rather impersonal and generally has little connection with the previous structure of the personality. Post-traumatic confusion in this respect is to be contrasted with toxic confusion, in which synthesis perception and gestalt are affected in more marked relation to the previous personality. Amnesia concerning the accident is the rule, although later a vague knowledge of the accident may return, but it is distorted. The amnesia regarding the accident may be the only lasting symptom. Patients are often unconcerned regarding their head injuries. Following the accident the mood is often characterized by resistiveness, later followed by apathy and bewilderment. Indifference and euphoria are common in those developing a Korsakoff syndrome. In some cases depression and worry may be in the foreground; in others there may be excitement similar to mania. Post-encephalitic monotony and pestering were found in a young group of people with head injuries. The changes in mood are due to:

1. The general reaction pattern of the brain. Confusion as such, coupled with perceptive and gestalt difficulties, carries with it a particular mood.
2. Korsakoff psychosis also carries with it a typical mood, which is due to the organic state, and may be caused by the general injury to the brain.
3. It is possible that some forms of excitement and mania belong in the same classification.
4. One is inclined to relate the post-encephalitic pictures with subcortical, mid-brain, and diencephalic lesions.
5. The localized lesions of Broca's and Wernicke's region give rise to characteristic changes in mood.
6. Parietal lobe lesion may give rise to a hypochondriacal attitude. Here the constitutional emotional temperament (manic or depressive) also influences the mood.

The changes may be discussed from the viewpoint of the localization of the injury. The changes in the ventricular gray matter are partially responsible for the changes in

consciousness and participate with the cortical lesions in the final elaboration of the disturbances in memory and judgment, and in the development of the Korsakoff syndrome. Special emphasis must be laid upon the diffuse congestion of the brain associated with universal perivascular hemorrhages. The hemorrhages are especially severe surrounding the ventricles. The similarity in alcoholic and post traumatic psychoses is regarded as due to the same pathological changes in the periventricular regions and the cortex. Mention is also to be made that from a psychological and organic point of view, psychoses such as schizophrenia may result, although it is realized that the trauma may be only an exciting factor. Head injuries may precipitate manic states and also those of depression, but they are not the exclusive causes of manic-depressive psychosis. They can change mild depressive states into severe ones. Impairment of judgment and memory may remain and become chronic after head injuries, and emotional disturbances and tendencies toward schizoid, psychopathic and epileptoid trends may be the final result of the organic changes. In minor head injuries, the traumatic scene may be relieved again and again in dreams, hallucinations, and phantasies, and may be interwoven with paranoid attitudes.

Personality Changes

In addition to the symptoms mentioned above, there occurs a change in personality. The patient becomes less conscientious and, even apart from episodic attacks of violence, shows a diminished appreciation of moral responsibility. Concentration and memory are poor; thinking is slow with rapid fatigue, which the patient frequently complains of. His capacity for work is nil. He may be depressed and realize he is ill. Since many of the symptoms are subjective, malingering is apt to be suspected. A distinguishing point is that the patient suffering from this disorder tends to keep away from amusements as well as work, as one is as great an effort as the other. Another point to be remembered is that there is rarely any relationship between the site of the brain damage and the nature of the mental symptoms. This is not surprising in view of the failure so far to locate definitely any but the simpler motor and sensory functions.

According to Henderson and Gillespie, the best classification is that of Adolf Meyer:

1. Direct posttraumatic deliria:

- a. Delirium accompanying febrile conditions.
- b. Delirium nervosum of Dupuytren, not differing from the delirium after operations.
- c. Delirium as a phase in the slow emergence from coma after trauma.
- d. Protracted deliria, usually with numerous confabulations. They may last for weeks or months.

2. Posttraumatic constitution:

- a. Mere facilitation of reaction to alcohol, influenza, etc.
- b. Vasomotor neurosis, headaches, especially on stooping, dizziness, attacks of meningismus, increased fatigability, irritability and intolerance to alcohol. This is the vasomotor neurosis described by Friedman and attributed by him entirely to vasomotor instability.
- c. Explosive diathesis (Kaplan). Great irritability, especially after alcohol, sometimes leading to acts of violence, often quite unmotivated, i.e., automatic, or even to an epileptic seizure.
- d. Hysteroid or epileptoid episodes (in form of "absences") with or without convulsions.
- e. Paranoid developments.

3. Traumatic Defect Conditions:

- a. Primary defects allied to aphasia.
- b. Secondary deterioration in connection with epilepsy.
- c. Terminal deterioration due to progressive alteration of the primarily injured part with or without arteriosclerosis.

4. Psychoses in which trauma is merely a contributing factor: e.g., general paralysis, manic depressive, etc.

5. Traumatic psychoses from injury not directly affecting the head: In the modern classification the last two (4 and 5) are called neuroses.

Summary

On account of the large number of automobile and other accidents neurotic states after head injuries have assumed a greater importance. In this year's literature, articles appear which tend to shatter some of the older concepts of traumatic neuroses and which indicate that the diagnosis of traumatic neurosis after injury is perhaps assumed too readily; also that many states hitherto-considered functional may really be on an organic basis, although in some in-

stances carefully study is necessary before organic disease can be demonstrated. Treatment of some of these as for an organic disease, i.e., by production of pneumo-cranium, is reported as giving good results.

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IS ANESTHESIA BEING NEGLECTED IN THE MEDICAL CURRICULUM?

A. L. SCHWARTZ, Cincinnati (*Journal A. M. A.*, April 25, 1936), made a survey of the medical colleges of the United States in an effort to determine the hours of instructions, both theoretical and practical, given medical students during their four years of work. It was felt that such information might be enlightening in its relation to the controversy of nurse versus professional anesthesia. In analyzing this survey it is obvious that despite the inclusion of lectures in anesthesia to the students there is a wide variation in the amount of time devoted, with an average of about ten hours given to the entire subject of anesthesia. Furthermore, it is inconceivable that in five medical colleges there is no instruction in anesthesia. With regard to practical demonstration, the extremes are even more marked. Again it is inconceivable that anesthesia is entirely neglected or given only a meager amount of time in the medical curriculum. In only ten of the colleges that replied are there departments of anesthesia as a distinct and separate unit. To the author, this survey indicates a deplorable inadequacy of training in anesthesia for the medical students. In addition to the inadequacy of training in the medical schools, the facilities for postgraduate training are limited. In a recent issue of *The Journal* the number of hospitals approved for residency in anesthesia numbered six. The total number of approved residencies numbered eight. Such a small number certainly indicates either a lack of interest in anesthesia or a disregard by the medical profession of the importance of training in anesthesia.

RIGHT-SIDED AND LEFT-SIDED CARDIAC FAILURE DIFFERENTIATED FROM PERIPHERAL CIRCULATORY FAILURES

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IN THIS discussion an attempt will be made to describe and analyze the separate features which characterize isolated failure of the right and left ventricles of the heart. It is my purpose to emphasize and explain the signs and symptoms of cardiac failure in order to show wherein it differs from peripheral circulatory failure or shock. This difference becomes more apparent when the right and left sides of the heart are considered separately.

Peripheral Circulatory Failure

Too often we still see dangerously sick people treated with digitalis when there is no evidence of cardiac failure. The patient suffering from surgical or traumatic shock, high intestinal obstruction, prolonged diarrhea, diabetic coma, pulmonary infarction, sepsis, pneumonia, or spreading peritonitis, is frequently treated as a cardiac patient. These conditions, when severe, are characterized by restlessness, thirst, pallor, rapid pulse, low blood pressure, cold sweat, poor muscular quality of the heart sounds, and empty veins with low venous pressure. These symptoms may be due to a decrease in the volume of the circulating blood as in frank hemorrhage, dehydration, or traumatic shock. Neurogenic and vasogenic factors may bring about vascular dilatation. Since the capacity of the vascular system is greater than the circulating blood volume, this results in a deficient blood supply to the vital organs. Examples are fainting spells, spinal anesthesia, and possibly the effects of histamine and other vascular dilators. Even when caused by an acute cardiac insult, as in coronary thrombosis or acute myocarditis, the mechanism is most likely the same as in other forms of shock. Severe impairment of the peripheral circulation is certainly present in these conditions, but do they indicate cardiac failure?

The answer to this question will become apparent when we consider the symptoms and signs of isolated failure of the right and left sides of the heart.

Cardiac Failure

General Considerations. We speak of "the heart" as though it were really one, losing sight of the fact that its two sides are spatially and functionally distinct from each other. The right side of the heart is interposed between the great veins and the lungs. It receives only venous blood; its sole function consists in pumping the venous blood into the lungs for oxygenation. It is therefore only a preparatory station for the greater circulation. The left side of the heart is interposed between the lungs and the organs and tissues of the body. It receives only arterial blood.¹ Upon it devolves the real task of supplying blood to the body. The heart and lungs are interposed between the arterial and venous systems; the right side belongs to the latter, the left side to the former.

The heart, arteries, capillaries and veins form a closed system. It is therefore evident that failure of either side of the heart may manifest itself by *upstream* and *downstream* signs and symptoms. Since the right side of the heart is interposed between the great veins and the lungs, its failure results in overfilling the great veins (*upstream*), and in some cases in sending insufficient blood to the lungs for aeration (*downstream*). Since the left side of the heart is interposed between the lungs and the organs and tissues of the body, its failure results in overfilling of the lungs (*upstream*) and sometimes in insufficient supply of blood to the body (*downstream*).

The term *congestive heart failure* refers only to the upstream manifestations. The

¹Read at the Medical Seminar of the Beth-El Hospital, Brooklyn, New York, October, 1935.

¹Some of the small bronchial veins empty directly into the pulmonary veins, thereby causing admixture of venous and arterial blood.

downstream effects of cardiac failure are due to a deficient supply of blood to the organs concerned and are similar to those caused by peripheral failure. For this reason the presence of congestive heart failure (upstream signs and symptoms) is of greater significance in the diagnosis of cardiac disease than the downstream signs.

It is important to bear in mind that the heart is a hollow, muscular organ and, like other hollow organs, it must properly receive the material brought to it and propel it onward by the contractions of its walls. It is therefore evident that complete diastolic filling is as important as efficient systolic contraction. Heart failure may as truly be caused by one as by the other. The truth of this is embodied in *Starling's law of the heart*, which implies that, all other things being equal, the output of the heart depends upon the completeness with which it is filled at the end of diastole.

Cardiac failure may then be due to:

1. Insufficient diastolic filling
2. Incomplete systolic contraction

Insufficient Diastolic Filling

Cardiac activity is concerned only with systole. Diastole is a passive process. The various functions of cardiac muscle, such as stimulus production, excitability, conductivity, contractility, tonicity, and co-ordination of functions, find their concrete expressions only during systole. During diastole there is relaxation of the cardiac muscle with a period of recuperation after the strenuous exertion of systole. It therefore follows that when the cardiac muscle is sufficiently diseased to interfere with its function, systolic contraction will be impaired.

On the contrary, diastolic filling depends only upon the extent and duration of cardiac relaxation and upon the venous pressure*. Insufficient diastolic filling may be present in thyrotoxicosis, paroxysmal tachycardia, constriction of the pericardium by bands (Pick's disease), chronic adhesive pericarditis, pericarditis with effusion, and certain cases of auricular fibrillation. In other words, insufficient diastolic filling is not the direct result of impaired heart muscle; in fact, most commonly it has extracardiac causes. That an irritable focus in the heart due to an organic lesion may be the cause of paroxysmal tachycardia or auricular fibrillation is self-evident. It must also be borne in mind that when the insuffi-

cient diastolic filling is due to an increased heart rate, exhaustion of the cardiac muscle may be an additional factor in the production of symptoms. Furthermore, since the circulation of blood through the coronary arteries occurs during diastole (Anrep), it follows that shortening of the diastole may interfere with the supply of blood to the heart and may injure the cardiac muscle.

When the extent and duration of diastole is insufficient for proper filling, both right and left ventricles are, as a rule, equally affected. For this reason, isolated failure of the left ventricle cannot be a result of this condition, since the output from the right ventricle is also restricted. Isolated left ventricular failure presupposes an efficient right ventricle.

The signs and symptoms of cardiac failure due solely to insufficient diastolic filling are therefore predominantly those which are present in cases of right ventricular failure. This will be discussed below. In pericarditis with effusion, pressure upon the pulmonary veins may produce pulmonary congestion with its resultant train of symptoms as found in left ventricular failure. This may also occur in constrictive pericarditis when the left ventricle is embarrassed more than the right. It is also evident that in cases where the right ventricle is intact, and the left ventricle has been weakened by hypertension or disease of the left coronary artery, the effect of incomplete diastole will manifest itself at first and predominantly as left ventricular failure.

Incomplete Systolic Contraction

While insufficient diastole does not depend, as a rule, on the state of the cardiac muscle, and is most often determined by extracardiac, or at least, extramuscular conditions, both ventricles being equally affected, this does not hold true in most of the cases of systolic failure. Here the cardiac muscle is at fault.

Injury to cardiac muscle may result from various causes, some affecting predominantly the left side of the heart, others, the right. It follows, therefore, that the symptoms and signs will vary according to the side most involved. When both sides are equally involved, as in cor adiposum, or involvement of both coronary arteries, the result will be predominantly right heart failure, as in diastolic failure. Since the effect of cardiac failure consists in insufficient onward motion of the blood column and this results in stasis in the blood vessels supply-

* According to Henderson, ascpnia, that is, hyperventilation with loss of carbon dioxide from the blood stream, results in incomplete diastole of the heart.

ing the particular heart chamber (upstream) and insufficient delivery into the blood vessel leading away from it (downstream), the following classification of the symptoms and signs of systolic failure seems to be justified:

- (1) Systolic failure of the left ventricle
 - (a) Upstream symptoms and signs
 - (b) Downstream symptoms and signs
- (2) Systolic failure of the right ventricle
 - (a) Upstream symptoms and signs
 - (b) Downstream symptoms and signs

(1) *Systolic Failure of the Left Ventricle*

Etiology. Failure of the left ventricle to contract efficiently is encountered in any disease of its walls, or when it is burdened with more work than it can do. It is most commonly associated with arteriosclerosis of the left coronary artery, mitral regurgitation, aortic disease whether rheumatic or syphilitic, essential hypertension, and chronic nephritis. In acute nephritis failure of the left ventricle is most likely due to inflammation of the arterioles in the left ventricular wall. This is part of a generalized arteritis. It is not likely that the short period of hypertension preceding the left ventricular failure is itself a sufficient cause. Left ventricular failure in rheumatic fever is essentially due to myocarditis of the left ventricle; the valvular lesions play only a subordinate rôle.

(a) Upstream symptoms and signs of left ventricular failure due to incomplete systole.

Dyspnea. Dyspnea on unusual exertion may be the first symptom. The ordinary acts of life may be performed with comparative comfort, but an unusual strain may be the first warning of left ventricular failure. Later on, even the accustomed acts of life become burdensome.

Nocturnal dyspnea, or cardiac asthma as it is sometimes called, is another manifestation of left ventricular failure. It consists of violent attacks of dyspnea occurring at night after the first few hours of sleep. This sometimes terminates in pulmonary edema. Frothy and bloody sputum may be present. It is not certain what mechanism is responsible for the dyspnea. It is very likely that increased tension in the pulmonary circulation is the crucial factor. This is suggested by the presence of moist râles in the lung bases, x-ray evidences of congestion of the lungs, and the accentuated second pulmonary sound. From the congested lungs, reflex stimuli are sent through the vagus to the

respiratory center in the medulla and to the cerebral cortex, giving rise to the objective and subjective manifestations of dyspnea (Harrison).

Cyanosis. This varies in degree. In the uncomplicated cases of left ventricular failure, it is of the pale or gray variety. It depends more upon an insufficient supply of arterial blood than upon lack of ventilation in the lungs. Needless to say, in the presence of marked pulmonary edema, or when accompanied by preëxistent pulmonary disease, or right ventricular failure, it may assume a deep blue tint. However, the presence of cyanosis alone does not imply that heart failure is the cause. It may be due to changes in the hemoglobin molecule. This is found in methemoglobinemia or sulphhemoglobinemia. It may also be due to admixture of the blood of the right and left ventricles, as in interventricular septum defects. Furthermore, localized contractions of the arterioles, as in exposure to cold, may result in cyanosis. This results from the local slowing of the blood in the affected parts with diminution of the oxyhemoglobin and an increase in the reduced hemoglobin. The cells of the tissues have a better opportunity to extract the oxygen from the oxyhemoglobin when the flow of blood is slowed.

Generally, the temperature of any part of the body is a more reliable indication of the efficiency of its circulation than cyanosis. Cyanosis not accompanied by lowered local temperature is not due to congestive heart failure or to contraction of the arterioles. Cyanosis caused by primary lung disease, before the onset of right ventricular failure, does not result in lowered local temperature.

Accentuation of the second pulmonary sound. This is an important and frequent accompaniment of isolated left ventricular failure. In hypertensive patients, the second aortic sound is louder than the second pulmonary. The sudden change in this respect is of grave significance because it is an indication of failure of the left ventricle.

Moist râles in the lungs. This is of value only when we can exclude primary lung disease.

Radiographic evidences of pulmonary congestion. These may be present in the absence of râles.

(b) Downstream symptoms and signs of left ventricular failure due to incomplete systole.

These are caused by inadequate blood supply to the body and are therefore similar

to those produced by peripheral circulatory failure. Their manifestations represent disturbed functions of the various body organs. The most dramatic result from cerebral anemia, namely, faintness, unconsciousness, or convulsions. Cold extremities are due to insufficient blood supply to the peripheral arteries. For the same reason impairment of renal function, with an increase in the nonprotein nitrogen in the blood, may also be present.

Severe anginal pains may result from inadequate blood supply to the coronary arteries. This is not uncommon in aortic regurgitation. Relief is obtained by exercise or nitroglycerin; in other words, by increasing the heart rate. This results in shortening the diastolic period, in which the pressure in the aorta is zero, no blood reaching the coronary arteries. The zero period obviously occurs only at the end of diastole. By shortening or eliminating this end period, the diminished coronary circulation can be increased. Digitalis is contra-indicated, first, because it increases the duration and strength of systole, and second, because it increases the duration and completeness of diastole. The first is harmful because the circulation through the coronary arteries takes place during diastole (Anrep); the second is not desirable in aortic regurgitation for the reasons just given. However, digitalis may be tried when it results in congestive failure with stasis in the lungs.

The downstream effects of cardiac failure are much less prominent than those due to upstream stasis. The former depend largely upon a diminished cardiac output. But this occurs rarely (Harrison). On the other hand, stasis is the very essence of cardiac failure and is always present. It sends reflex stimuli from the lungs, and perhaps also from the veins, which produce dyspnea, the most distressing symptom of cardiac failure. In every case of venous stasis one would naturally expect to find a diminished quantity of blood in the "arterial tree." The fact that this is not so is accounted for by an increase in the total blood volume in many cases of cardiac failure.

Relief of the upstream signs may take place dramatically when the right ventricle also fails, relieving the pulmonary congestion and the dyspnea. Since the output of blood from the left ventricle is not increased by failure of the right ventricle, it follows that the downstream signs will remain unchanged and perhaps even become aggravated.

Mitral stenosis results in pulmonary congestion and gives rise to the symptoms of left ventricular failure although the left ventricle may be intact. In the absence of co-existing mitral regurgitation or rheumatic myocarditis, the left ventricle may be even smaller than normal. In mitral stenosis there is a simple mechanical obstruction to the flow of blood from the lungs into the left ventricle. It differs from left ventricular failure because it occurs most often in young females whereas left ventricular failure is a disease of late middle or advanced age, because it rarely gives rise to cardiac asthma, and because it offers a far better prognosis even when accompanied by pulmonary congestion and dyspnea.

(2) Systolic Failure of the Right Ventricle

Etiology. Right ventricular failure may be due to any circumstance that burdens the right ventricle with more work than it can do, or to any disease of its walls. The first is encountered in those conditions that give rise to hypertension of the lesser circulation, namely, isolated left ventricular failure, mitral stenosis, pulmonary emphysema, chronic bronchitis, fibrosis of the lungs of diverse origin, thickened pleurae, kyphoscoliosis, and, in the acute form, pulmonary embolism. It may be due to carcinomatous lymphangitis of the lungs, the primary focus being in the lungs or elsewhere in the body. Not uncommonly, intense dyspnea, due to this, is the first sign of an unrecognized carcinoma of the stomach. Pulmonary stenosis also increases the work of the right ventricle although it is not accompanied by hypertension of the lesser circulation. Right ventricular failure in active rheumatic fever is largely caused by the myocarditis, the valvular lesion playing only a subordinate part. In the rare case of tricuspid stenosis, the mechanism is exactly the same as in mitral stenosis; the right ventricle may not be affected if the tricuspid stenosis is the only lesion.

(a) Upstream symptoms and signs.

Engorgement of the great veins with a rise in venous pressure. The mechanism is self-evident. A glance at both sides of the neck will reveal its presence, although the extent of the rise can be accurately determined only by the indirect or direct methods of measuring venous pressure. We use the latter method. Normal venous pressure is 4-8 cm. of blood. A rise to 10 or more speaks for right ventricular failure in most cases. Localized obstruction to the venous

return of blood must be ruled out. On the other hand, in the severest cases of isolated left ventricular failure, the venous pressure remains normal.

Cyanosis. This is apt to be more intense than in left ventricular failure. It may be due to the primary lung disease which is the cause of the right ventricular failure, or to the accumulation of reduced hemoglobin in the blood, which is a result of slowing of the circulation. In the latter case the extremities will be cold, whereas in the former, without concomitant marked right ventricular failure, the extremities may still be warm in spite of the cyanosis.

Dyspnea. The violent attacks of paroxysmal dyspnea as seen in left ventricular failure are not present although there is as a rule some dyspnea. This is frequently due to the fact that the left ventricle can not dispose of even the diminished output of the right ventricle. Harrison has suggested that the increased pressure in the mouths of the inferior and superior venae cavae reflexly increases the dyspnea. This is inconsistent with the well known fact that the dyspnea of left ventricular failure disappears when the venous pressure increases as the result of failure of the right ventricle. In long standing cases of pulmonary congestion with brown induration of the lungs, as in mitral stenosis, the diminished vital capacity explains the dyspnea. Hydrothorax, hydropericardium, ascites, and a large liver give rise to the same effect by pressure on the lungs and mechanical interference with the functioning of the heart.

Congestion of the organs. Albuminuria will result from the congested kidneys. This is accompanied, as a rule, by a diminished output of urine of a high specific gravity. Subcutaneous edema, hydrothorax, and hydropericardium appear in cases of long standing. Portal stasis with congestion of the liver frequently terminates in hepatic cirrhosis and ascites.

(b) Downstream signs.

These are due to an insufficient supply of

blood to the lungs and therefore to the left side of the heart and the greater circulation. This will result in the beneficial effects on the patient as mentioned above, but it will also cause impairment of blood supply to the left coronary artery, further weakening the left ventricle, and thereby increasing the signs of left ventricular failure.

Conclusion

All classifications and divisions in the study of nature are more or less artificial. Nevertheless knowledge would be impossible without them. Isolated failure of one ventricle without any involvement of the other may be rare, although it does occur. When there is a combination of both, as is most often the case, the clinical picture will depend upon the side most involved. The extreme cases are evident at a glance, as, for example, the hypertensive patient in an attack of cardiac asthma, struggling for breath in the sitting posture, with a normal venous pressure and hardly any liver engorgement, as compared with the deeply cyanosed patient lying comfortably on his back with a large smooth liver and a high venous pressure. Between these two extremes any number of gradations are possible. Furthermore, a detailed knowledge of the symptoms and signs of right and left ventricular failure permits a clearer insight into the essence of heart failure. This analysis also serves to differentiate cardiac failure from peripheral circulatory failure. Compare the signs and symptoms of the patient in shock, as described at the beginning of this paper, with those due to failure of the left or right side of the heart. *Where there are no signs or symptoms of right-sided or left-sided heart failure there can be no heart failure.*

Note

I wish to acknowledge my indebtedness to Dr. Arthur M. Fishberg, whose paper, read at the Graduate Fortnight of the New York Academy of Medicine, October 27, 1931, first stimulated my interest in this subject. It was subsequently published under the title *Some Cardinal Circulatory Syndromes* in the American Heart Journal, 7:279 (February) 1932.

200 NEW YORK AVENUE.

POLIOMYELITIS VACCINE

PAUL H. HARMON and HENRY N. HARKINS, Chicago (*Journal A. M. A.*, Aug. 22, 1936), point out that during the year just past the attention of both the lay and the medical public has been focussed on field vaccination studies aiming to prevent infantile paralysis. Even though these ap-

plications followed specific laboratory trial of recognized immunologic procedures, they were forced to an abrupt halt by the suspicion that a few casts were casually connected with the immunizing procedure. At present it is believed that, as a result of these experiences, a safer method of prevention should be evolved for clinical trial.

Clinical Notes

RANDOM NOTES OF AN OTOLOGIST

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THE telephone rings wildly. I go toward it hurriedly. "Hello—Yes, Mrs. Smith. What's the trouble? Your ear pained all last night? And you want me to do a mastoid operation at once? Well, calm your fears. We shall see. No, I certainly cannot tell you whether you have mastoiditis by hearing your story over the telephone. You had better come right along and let me have a look. All right. I'll be here. Good-bye."

Her last words were:

"And please have everything ready for a mastoid operation!"

Just as simple as that! The patient diagnoses mastoiditis, and I am expected to do the operation right in my office chair. This must be a layman's idea of an immediate approach to heaven or its opposite, or a possible escape from either.

Well, upon examination, the fundus menti is full of some sticky, almost irremovable material which is obviously antiphlogistine. The mastoid area is also covered with it. Mechanical "insult" to the membrana tympani makes the problem difficult at first sight, but when one turns to the stoma, presto, there is the *corpus delicti*—a rotten third molar! Same old story of diagnostic error, due to pain referred to a region remote from the lesion.

Sources of Otalgia

Sometimes, this phantom pain finds origin in a deep tonsil which is infected either intra or extramurally. Any one of a half dozen possibilities can be set down, but one must never overlook the teeth as a very common cause of pain. If the budding otologist is as clever as all that, the grateful patient will, no doubt, send in her deafened maiden aunt who relates to him, in detail, how bad the noises are in her ears, and that she knows, if he will just stop the noises, she will be

able to hear perfectly! If you cannot cure otosclerosis promptly, you are not likely to hear from the ardent relative again—unless she refuses to pay the bill, in which case you may!

Surgical Complications

To the man who is capable of doing major surgery, otology offers an inviting field because of the "complications" of chronic-otitis media. A deeply entrenched infection of the tissues of the middle ear and mastoid insidiously destroys, not only the soft structures, but also the bone, and since, in many instances, there is only a thin osseous plate intervening between the patient and eternity, this barrier not infrequently gives way, and the otologist must run a trying and difficult race with death. Sinus thrombosis, brain abscess and labyrinthitis are the great triumvirate of aural pathology. They would scarcely occur at all, if it were possible to cure every case of acute otitis media, but many such are not seen by the otologist until they have passed into the chronic stage.

Laudable Otorrhea

Our grandmothers used hot oil for ear-ache, and often succeeded in burning a hole through the drum. There was, of course, relief from pain, followed by a discharge which was prone to become chronic from the outset because of the great trauma to all of the aural tissues. But this fact troubled our forebears not at all, for the object was to make an ear "run." It was thought to be "very bad" to stop the running, as this "drove the matter into the system, and people died from it." No wonder! Unfortunately, they did not die soon enough, and thus avoid all of the horrors caused by ignorance and superstition. In my early days in practice, one had to try to convince grand-

mothers, and mothers too, that aural discharge is not a *good* thing, and that the surgeon must do all in his power to stop it, either by medical or surgical means.

Fewer "Mastoids"

We see in these days relatively few major complications of chronic suppurative otitis; in fact, relatively few "mastoids." I am speaking now, of course, of conditions in the United States. Europe has always had plenty of these neglected and difficult cases, partly because the people are (or were) not so well educated in things medical, and partly because distances to large cities are often great, and means of travel slow, poor, and expensive. Thirty years ago, in Vienna, that Mecca of medical men, it was a common experience for a patient to travel three or four days in a fourth-class railway couch from remote provinces in Russia or Poland. That is why one had the opportunity to study practically all of the major complications, to operate upon them, and to observe them well—or dead!

Delay Is Dangerous

Here and now, mothers know the danger of neglected pain in an ear, and so, in the presence of a suppurative middle ear condition, a physician is called, and the drum is opened at once. This prompt and efficient drainage reduces the number of empyemas of the mastoid cells which demand immediate operation to a very small group; for many infected mastoids recover without exenteration. The nice point to determine is just which ones will recover, and which must be operated upon. Here experience is a valued guide, but if error is likely, it is far safer to err on the side of operation. Few patients die from too early operative interference; while many die from operation too long delayed. The more "important" the patient, the more likely it is that an operation will be postponed until the eleventh hour, or maybe the twelfth! It is sometimes true that in many counsellors there is no safety, which is a variation of the old saw about "too many cooks." This is often to be observed when medical advisers are reticent about assuming any responsibility, or where it is desirable not to incur the displeasure of patient or family. It is for these reasons that physicians who are ill with mastoiditis do badly—they refuse to be operated upon, or the surgeon waits in the fond hope that his friend or colleague will "get by" without operation. If an otologist assumes the care of any such individu-

al, he must put aside all thought of personality, and act only with impartial judgment based on his experience. He must not be swayed by sentimental or emotional feelings one way or the other. In doing this he will sometimes be cultivating dislike or even downright abuse, but a clean and clear conscience must be his guide.

Sparing or Saving a Friend

The desire to spare a friend was well illustrated some years ago. A gentleman about forty years of age had been treated by his "pal," an excellent otologist, for two weeks. The condition looked like a simple suppurative otitis which had been opened and was draining in the usual manner, but with a good deal of pain in and around the affected ear. A consultation out of town carried the otologist away, and his friend came to my office. A glance was sufficient to justify a suspicion of subperiosteal abscess, in spite of the well-known fact that this is "rare" in adults. It was difficult to convince the gentleman, and, in the light of his relations with the other otologist, "nerve" was required to demand that he submit himself for immediate operation. This firm stand was taken, however, and he was on the table within two hours. At the first entrance of the knife, pus gushed forth, and, proceeding, we found a mastoid entirely broken down—one of those "floating" mastoids we have all seen. Recovery was uneventful, but a great deal of diplomacy was required to patch up the friendship, the integrity of which had been damaged by a desire to give the "pal" a "break." Readers may remember the pious prayer: May the Lord save us from our friends!

Delay May Be Wise

While it is a fine quality of mind to wish to overcome all obstacles, and in the words of Dr. Robert T. Morris, "not to suffer defeat," there is a place, however, where we must learn to desist or to quit until we can re-attack a problem when fortified by better judgment, by the advantage of time, and by better working tools and conditions. Dr. Chevalier Jackson, as everyone knows, has removed more foreign bodies than any other bronchoscopist—has removed them successfully, and his rule is, never to continue the effort longer than twenty minutes. If, in that period, the foreign body has not been recovered, the operator must withdraw and study his problem, fortifying himself, and also the patient, for another sitting under more favorable circumstances. This may

mean the invention of a new instrument, meanwhile; a change of method or position; further x-ray interpretations or some other alteration in plan. There is little use in extracting a foreign body from a dead patient. One's zeal must not blind one to the patient's best interests.

A Case in Point

The application of this principle came to mind many years ago when a little boy entered the clinic with the history, derived from the mother, that another child had put a piece of stone in Johnny's ear. There was so much swelling of the meatus that one could see little, but a probe indicated that a foreign body was in the depths of the canal. I tried various forceps and curets, and even succeeded in passing a piece of snare wire around the object. But twist and pull as I might, the stone remained *in situ*. In my opinion, a posterior incision and section of the meatal wall was the next advisable procedure, and word was given to the house surgeon to "set" the case for the following day. Accordingly, we etherized the patient in the operating room with sterile precautions, as for a mastoid operation. Posterior incision was made, the meatal wall was sectioned, but the stone was no longer in the canal—it had been pushed straight through the drum into the middle ear! I knew at once that some one had been tampering with the problem after I had left the preceding day, but could not find out who, and the important thing was to get the stone out and finish the operation, not to attempt punitive measures upon the head of an enthusiast. It became necessary to do a radical mastoid, as the drum was destroyed, the ossicles dislocated, and suppuration with labyrinthitis was to be considered as a possible outcome of all this meddling. After taking down the antral "bridge," I found a piece of shale stone, one angle of which was anchored in the antrum, the other in the eustachian orifice. It was picked out easily enough now, but in the bottom of the tympanic cavity lay the ring of a small *curet*! It turned out that one of the eyewitnesses who had seen me struggle with the problem of removal had decided to "beat me to it" by trying to engage the stone with a ring-curet. His efforts had pushed the stone into the middle ear. Just why he stopped after breaking only one instrument is unexplainable. There were other instruments in the cabinet, but perhaps even he could not break them.

The God Mercury

Salvation of a patient thorough bichloride of mercury was almost a precept a quarter of a century ago. Every infection was subjected to its application in some form or other. But the blessings it conferred upon humanity were not unmixed with grief. A young woman came in complaining of a burning soreness of the throat on the right side. Some days previous to the visit, she had suffered an attack of pain followed by discharge. She consulted an old friend, a general practitioner, who told her to irrigate the ear with bichloride of mercury, and when irrigation was finished, to instil bichloride drops one to five hundred into the canal and to plug the ear with cotton. She was very faithful in following the treatment, but, growing worse, instead of better, she sought other aid. The rupture of the drum had made a jagged hole through which fluids passed into the middle ear and eustachian tube with ease. Hence the burning in the throat. Eventually, the condition cleared up quite well, but strained feelings between doctor and patient were engendered, and the practitioner was very angry when I 'phoned him and related the circumstances. He denied that his advice had produced any other effect than was good and holy, or wholly good.

Moral:—None are so deaf as they who will not hear!

THE THERAPY OF PSYCHONEUROSES

BERNARD FANTUS in collaboration with S. H. KRAINES, Chicago (*Journal A. M. A.*, Aug. 22, 1936), stresses that the "functional disorders" are just as real disorders as are "organic disorders." Patients with neurotic manifestations are not simply "imagining." The pain that the querulous woman complains of is just as real to her as if it were of organic etiology. Functional and organic disorders are neither independent, antagonistic nor mutually exclusive of each other. They interact in the most complex patterns. Therefore, successful treatment of all excepting purely physical diseases demands that every patient, whether evidently psychoneurotic or not, be given, in addition to a thorough physical and clinical examination, a social analysis and a personality study: a total analysis.

Economics

Department Edited by Thomas A. McGoldrick, M.D., LL.D.

"THE ATTACK ON GROUP MEDICINE"

THE NATION, a magazine known to a goodly number of Americans, in its issue for July 4 printed an article entitled "The Attack on Group Medicine," by one James Rorty.

The author is not so well known as the publication for which he writes; but THE NATION, in discussing the contributors to that number, on page 140, naively stated:

James Rorty concludes in this issue his series on medical politics in the United States. Formerly an advertising man, Mr. Rorty wrote the inside story of advertising in his book, "Our Master's Voice."

Read, now, some of the outpourings of this former advertising man who, in the language of his training, speaks dogmatically and otherwise concerning the medical profession and its constituted bodies of organization; reference to which article is made because it is an example of similar outpourings from propagandists inspired mostly by sources unknown.

The Borden Milk boycott of Chicago is dragged into the opening paragraphs, and the American Medical Association, and also its secretary, Dr. Olin West, and its journal editor, Dr. Morris Fishbein, are taken to task for not having made official pronouncements against the boycott. Read and ponder:

Excellent! But did the American Medical Association officially and publicly repudiate the boycott at any time while it was in progress or since? It did not. Did Doctor Fishbein repudiate the boycott in the JOURNAL? He did not.

The plain fact is that in doing what they did the medical boycotters and slanderers were obeying the spirit, if not the letter, of policies which the American Medical Association has followed for many years—policies designed to defend and perpetuate a system of medical service and payment which is demonstrably obsolete and heartbreakingly destructive both of human health and medical idealism. Again and again, both officially and unofficially, the American Medical Association has used brass knuckles on the advocates of change in the organization of medical care wherever they showed their heads. As a result of this policy some of the best heads, both in and out of the medical profession, are bloody—but not noticeably bowed. Expulsion from his medical society, the loss of hospital and university appointments, public ostracism, and private slander—these are the penalties visited almost automatically upon nearly every doctor who attempts

to rip off the nineteenth century swaddling clothes in which the rugged medical individualists would like to bind the huge potential resources of modern medicine.

Could statements such as these be clothed in sentences more ridiculous? Before Advertising Man Rorty rushed into print with such an onslaught, he might well have taken time to familiarize himself with the history of the American Medical Association and its long record of commendable service

Note the mental attitude of "former advertising man, Mr. Rorty," and how he vents his mind upon the constituent state associations and their component county societies:

There is plenty of current evidence that the ruling hierarchies of the American Medical Association, including most of its state and county units, intend to obstruct and hamstring all attempts to set up voluntary group-practice and group-payment schemes of medical care, regardless of the demonstrated quality and economy of the service offered by such organizations.

After commenting, too, on the Los Angeles and Dallas County Medical Societies proceedings, Mr. Rorty states that the American Medical Association Judicial Council

... enunciated a new principle, now embodied in two clauses, 6 and 7, which have recently been added to the office code of ethics. Any group-practice organization is now ruled "unethical."

6. When the conditions of employment make it impossible to render adequate service to the patients.

7. When the contract, because of any of its provisions or practical results, is contrary to sound public policy.

In practice this means that if the majority of the members of any county medical society decide that a clinic or group-practice organization is "against sound public policy" they can expel from their society the doctors associated with the clinic, and the Judicial Council of the American Medical Association will sustain them. What the American Medical Association is saying in effect is this: A group clinic may not solicit patients, directly or indirectly; may not underbid individual physicians to secure a contract; may not charge fees which, in the judgment of the competing individual members of the county medical society, are inadequate to secure good medical service; may not interfere with reasonable competition in a community; may not prevent free choice of a physician; may not set up conditions of employment which in our judgment make it impossible to render adequate service to patients. Finally, no group-practice organization may operate under a contract which because of any of its provisions or practical results is in our judgment contrary to sound public policy.

This is the heart of the American Medical Association's 1936 policy with respect to the organization and

* From *California and Western Medicine*, 45:219 (September) 1936.

distribution of medical care. Not even the United States Supreme Court has dared to assert such impudent claims to power over matters affecting the life and death of the American people. True, the American Medical Association has no legal authority. It cannot prevent a physician from practicing nor can it stop a group clinic from operating. But it can and does implement its claim to authority by public excommunication and private ostracism and persecution. It has no police powers, but it can and does summon its medical squads and battalions to a holy war in defense of their own status, their own emoluments. It does this whenever the pressure of public need fires a group of progressive doctors with the determination to cast off the shackles of the American Medical Association's pocket-motivated "ethics" and attempt to give people decent medical care at a price they can afford to pay. There have been scores of such holy wars and they are all pretty much alike. Two recent examples will suffice to illustrate the customary strategy and tactics.

In similar fashion, in this "second of a series of four articles on medical politics," Layman Rorty continues on to discuss several medical-service groups which in his opinion have been unjustly disciplined by the county medical organizations of which they were members; his inference being, of course, that the members of the county societies were in each instance persecuting the offenders.

It is not to be wondered at that a layman, with an advertising man's training and background such as that of Mr. Rorty, should be unable to understand why physicians place a high value on conduct as a basis of membership in their county medical societies, and that when county society members as a whole, and almost without exception, object to a member or members in-

augurating a form of medical service which somewhere in its make-up is motivated and associated with commercialism as a basic element, rather than by maintenance of high standards of professional service, these members of county societies are only giving expression to their individual selves as reflected in the aspirations that led them to enter a profession where service to human fellows, rather than acquirement of riches through trade or vocation, was to be the major element in their life careers.

Mr. Rorty writes his story in first-class style—for that is what an advertising man must learn to do to emphasize the wares of his client; but he certainly draws broad and dogmatic deductions, with condemnation of almost the entire medical profession of the United States (for the American Medical Association has a membership of about 103,000 physicians), from some isolated instances which even if he were right—which we believe he is not—do not establish premises warranting such conclusions. And even if in one or two cases he were right, he might well remember the old rule in logic, not to draw general conclusions from special instances, which he seemingly has done, with literary results as noted above. Perhaps, it was the literary merit (!) that led the editors of THE NATION to accept the article. If not that, then mayhap some of their special journalistic policies, which an inspection of their magazine quickly reveals.

THE BLOOD CHANGES IN NORMAL PREGNANCY AND THEIR RELATION TO THE IRON AND PROTEIN SUPPLIED BY THE DIET

In this communication FRANK H. BETH-ELL, Ann Arbor, Mich., (*Journal A. M. A.*, Aug. 22, 1936), reports the results of blood studies on a group of young women with uncomplicated pregnancies and discusses some aspects of the relation of diet to the blood in pregnancy. He made studies on the blood of sixty-six healthy young women during the last trimester of pregnancy, and obtained similar observations from fifty healthy nonpregnant women of the same age group.

In 70 per cent of the pregnant subjects the blood values were too low to be ac-

counted for solely by increased plasma volume with consequent blood dilution. Anemia in pregnancy is commonly due either to pre-existing iron depletion or to an inadequate intake of protein of high biologic value during gestation. Rarely it is of the pernicious type amenable to liver or stomach therapy.

A lack of iron may be recognized before the development of actual anemia by the presence of a lowered color index or of red blood cells of less than normal size. In such cases the administration of an inorganic iron preparation in adequate dosage is indicated. Anemia dependent on protein deficiency, characterized by a normal color index and by red blood cells of normal or increased volume, may be prevented or corrected by a suitable diet.

Cancer

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CANCER OF THE LUNG

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CARCINOMA of the lung is a condition which is far more prevalent than we have been taught to believe. We know that carcinoma and other malignant conditions elsewhere in the body metastasize frequently to the lung, and when we recall that it is estimated that approximately five per cent of all carcinomata are *primary* in the lung, we must realize that it is necessary to keep this condition in mind during the examination of any patient with pulmonary symptoms.

Carcinoma of the lung, if secondary, is usually a diffuse condition and not discrete; it is present in the parenchyma and not in the bronchial tree. It is not possible to obtain a biopsy specimen through the bronchoscope in secondary carcinoma in the lung.

Carcinoma of the lung, if primary and not late in the disease, is unilateral; is believed to originate in the bronchial tree; and may involve all or part of any lobe of the lung.

Primary carcinoma of the lung may exist without causing any pulmonary symptoms. Unless a new growth in the lung causes severe enough symptoms to make the patient consult a physician, a primary carcinoma of the lung may be discovered only at post-mortem examination. Our series of cases includes two such patients.

Metastatic growth from these tumors may take place through the bloodstream, the lymphatic system or both. Metastases to the lymph glands, bones, kidneys and brain may be present in the body from a small, pul-

monary-symptomless primary carcinoma in the lung. "When in a person of middle age, there is an abrupt onset of the symptoms of a rapidly developing brain tumor, the condition is more likely to be secondary than primary, and the primary lesion should be looked for in the lungs."

In chronic pulmonary disease in middle age or later, with persistence of symptoms, if accompanied by progressive loss of weight and strength, and absence of the tubercle bacillus in the sputum, malignant disease of the lungs must always be considered.

Primary carcinoma of the lung may cause pulmonary symptoms similar to those due to pneumonia, abscess of the lung, bronchiectasis, syphilis of the lung, tuberculosis of the lung, or neoplasm secondary to malignant growth elsewhere in the body. Hamman, of Baltimore, writes, "In the lungs, tumor growth may cause cavities, bronchiectasis, erosion of blood vessels—sometimes with fatal hemorrhages, and it may be accompanied by a broncho-pneumonia, empyema, abscess or gangrene."

There is no sign or symptom which is pathognomonic of primary carcinoma of the lung. Pulmonary symptoms may predominate, but metastases in other parts of the body may be the first reason for investigation for a primary growth in the lung. The diagnosis is not an easy one to make, and it cannot be made from one examination of the patient. Differentiation from other pulmonary conditions can be made more easily now than fifteen or twenty years ago, because of our improved means of examination, such as the fluoroscope, Röntgen-ray

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picture, lipiodol, the bronchoscope and the ability to obtain tissue for examination. The history of the disease and its subsequent course are of no small importance, however, in making the diagnosis.

Primary carcinoma of the lung seems to be increasing in frequency, a fact which can be proved only by study over a longer period of time. Many believe that the discovery of more patients with this condition is due to improved instruments and methods of diagnosis, to the added attention given to the subject, and to the increase in the span of human life. At the present time, the consensus at Kings County Hospital is that a more careful differentiation of pulmonary pathology is being made due to emphasis on the subject of pulmonary new growths. We have not proven to our satisfaction an increased incidence of primary carcinoma of the lung.

Primary carcinoma of the lung, as carcinoma elsewhere in the body, is not necessarily a disease of old age. It is not improbable that the condition is a chronic one, resulting from an excessive regeneration following chronic irritation or inflammation in the bronchial tree. Unlike cancer in other viscera, which often leads to a premature mechanical death, a bronchogenic malignant disease progresses unnoticed, probably for years, causing only mild broncho-pulmonary symptoms. During its protracted course, it may take different aspects depending upon such factors as metastases to the same lung; secondary infection with suppuration of the lung; erosion of blood vessels in and around the tumor, causing hemorrhage and disintegration of the new growth; pulmonary atelectasis or pleural involvement.

Primary carcinoma of the lung can co-exist with pulmonary syphilis, and unless the syphilitic degeneration is too far advanced, benefit of this syphilitic condition may result from anti-luetic treatment, without any influence on the carcinomatous condition. In uncomplicated gumma of the lung, which one may believe to be carcinoma, this tumor will disappear under appropriate treatment, thus giving a differential diagnosis.

The differentiation of primary carcinoma of the lung and pulmonary tuberculosis is too complicated to enter, in a brief presentation such as this. One must keep in mind the usual unilateral advanced degeneration in carcinoma, which is usually bi-

lateral in advanced tuberculosis; also the absence of the tubercle bacillus in the sputum in carcinoma, although the two conditions may co-exist. If pleural fluid is present, the carcinoma frequently reveals itself in this fluid.

Serial bronchography under roentgenoscopic control must be considered in order to make a diagnosis of bronchogenic carcinoma in its early stages.

The following history is not unusual. A man, forty-five years old, was admitted to the hospital with the following complaints: for the past year, weakness, loss of weight and cough had been noticed. For three months before admission, there was severe pain in the left chest. Dyspnea had been present and increasing during this period. The history and physical examination suggested a new growth in the left lower lobe. A radiographic report stated that an irregular area of consolidation was present at the inner and posterior portions of the left lower lobe. One week later a bronchography was done, at which time there was noted a complete obstruction of the left lower bronchus supplying the inner half of the lower lobe. The occlusion of the bronchus was complete. The bronchoscopic examination revealed a hard mass obstructing the left main bronchus in the region of the left lower lobe. A biopsy specimen was obtained which was reported as epidermoid carcinoma. The patient died one hundred and fifty-two days after admission, and the post-mortem examination of the lung revealed a primary carcinoma of the lung, with involvement of the left bronchus, the lower six ribs and the dorsal vertebrae.

A study of 287 patients at Kings County Hospital with lung tumors, primary and secondary, from 1924 to 1936, revealed two hundred and four male patients and eighty-three female. In ten year periods of ages, between 10 and 20 years of age there were four patients with lung tumors, three secondary sarcoma, and one seventeen year old girl with a primary carcinoma of the lung, autopsied. There were nine patients between twenty and thirty years of age; twenty-one, between thirty and forty years of age; sixty-eight between forty and fifty years of age; eighty-seven between fifty and sixty years of age; seventy-four between sixty and seventy years of age; twenty between seventy and eighty years of age; and four over eighty years of age, one of whom had a symptomless primary carcinoma of

the lung, proven by postmortem examination. Eighty-three per cent of these tumors occurred between forty and seventy years of age.

In this series of patients, sixteen primary carcinomas of the lung were proven by autopsy; one hundred and sixty-four were diagnosed as primary carcinoma of the lung, without autopsy, after proving as far as possible that these patients had this condition; seven of these had positive Wassermann reactions. Sixty-seven had secondary carcinoma of the lung; twenty-one had lymphephosphoroma; fifteen had osteosarcoma; two had teratoma; two had hypernephroma.

No brief description of the physical signs can be given. These must differ according to the type of the disease, the site of the tumor, the extent of lung involved, and the presence or absence of effusion in the pleural cavity.

The commonest symptoms are: cough, with or without expectoration, which if present, may be bloody; pain, which may be steady or paroxysmal; dyspnea, which may be severe, but which is not wholly dependent upon the amount of lung involved; hemoptysis may occur, depending upon the location of lung destruction in reference to the large blood vessels; cyanosis may be marked; weakness, which is the weakness found late in all malignancies; emaciation, which is not necessarily present, except during the late stages; fever, which is due to some secondary inflammatory process.

Treatment is unsatisfactory. Medical treatment must be symptomatic and palliative with no curative effect on the condition. Bronchoscopic treatment may remove early, small bronchial tumors, but is not beneficial in the later stages of the disease.

Carcinomata of the bronchi and lungs have not proven responsive to röntgen treatment either in large doses over a short period of time or in fractional doses over a longer period. Occasional cases have been reported where improvement in symptoms has been noted and the condition of the patient has been improved temporarily.

Radium may be placed directly into bronchial tumors and will diminish the size of these tumors, thus giving more comfort to these patients, but the tumor extends rapidly into the parenchyma.

Artificial pneumothorax has been done for this condition but no lasting benefit has resulted.

Concerning surgery in these primary tumors, Rabin and Nguhof of Mt. Sinai Hos-

pital, New York (*Jour. Thor. Surg.* December, 1934, 4:147) state "only gross topographic features of cancer of the lung proved to be of aid in classification as to probable operability or probable non-operability. Two main groups, termed the circumscribed and the non-circumscribed types, are identified and described. The circumscribed type comprises a fourth of the cases. Cancers of the circumscribed type occupy the parenchymal and peripheral zones and are termed parenchymal and peripheral tumors. Regional lymph node involvement occurs late and is limited. The peripheral tumors grow from branch bronchi and may therefore be termed branch bronchus circumscribed tumors. The non-circumscribed type, to which three-fourths of pulmonary cancers belong, comprises tumors growing from main and from branch bronchi. These neoplasms are termed main bronchus and branch bronchus tumors. They present the usual invasive characteristics of cancer in the great majority of cases. Clinical, radiographic and bronchoscopic examinations serve to differentiate the circumscribed from the non-circumscribed types. The diagnosis as to type can be accurately made on the basis of these examinations. Peripheral and parenchymal tumors tend to fall into the class of operability. On the other hand, the great majority of main bronchus and branch bronchus tumors, with the exception of the peripheral type, do not fall into the operable class, in the sense of surgical eradication, at the time at which patients suffering from these lesions ordinarily come under observation."

Lobectomy has been advocated as the treatment of choice in certain patients having primary carcinoma of the lung. Only early cases are suitable for this operation, and benefit has been obtained only in the circumscribed type of carcinoma which comprise but 25 per cent of the cases, and occupy the parenchymal and peripheral zones. The non-circumscribed type, forming 75 per cent of all cases, are main or branch bronchus tumors and have not responded to surgical treatment. Lobectomy in primary carcinoma of the lung is reported to carry an immediate high mortality, from 20 to 30 per cent. Radiation by röntgen-ray and radium has no immediate mortality. In advanced cases, with severe, constant pain in the chest, section of the sensory nerves of

—Concluded on page 508

ASSOCIATED PHYSICIANS OF LONG ISLAND

Scientific Session at the Nassau Hospital, Mineola, L. I., Tuesday, October 6, 1936.

Proceedings

IN PART

DEFORMITY OF KNEE CORRECTED BY BENNETT'S OPERATION

OTHO C. HUDSON, M.D., F.A.C.S., Hempstead, New York

We wish to report the end results of two cases treated on the Orthopedic Service at Nassau Hospital, Mineola, N. Y.

● Bennett's operation for correction of an extension deformity of the knee:

Case 1. T. W., 47 years, white, housewife.

Patient had a sudden onset of acute mono-articular arthritis of the right knee in November, 1934. This was treated by immobilization, aspiration, removal of foci and vaccine therapy. Culture of the joint fluid was always negative. The acute process gradually subsided and as an end result the patient had a painless but ankylosed knee due to the periarticular contractures. An x-ray showed no gross bony pathology. There was no motion in the knee.

Patient was admitted to the Nassau Hospital 2-21-'36 and a stretching of the knee was done under anesthesia. There was no flare-up of the acute infectious process. About ten degrees of motion was obtained with the aid of active use and physical therapy. On 3-6-'36 another stretching was done with no improvement in the patient's condition. Patient wished to obtain motion in the knee.

Because of the contracture of the rectus tendon and vasti attachments it was decided to do a Bennett's lengthening of the quadriceps tendon. On 4-18-'36 under general anesthesia through a utility incision, a "Z" lengthening of the rectus tendon was done and at the same time the vastus medialis and lateralis were incised lateral to the knee joint. The patella was found to be adherent by fibrous tissue to the femoral condyles. This tissue was excised. Under an-

esthesia the knee could be flexed to ninety degrees. A repair was done with heavy black silk for the tendon, chromic for the muscle, and dermal for the skin. Plaster was applied with the knee in about twenty degrees flexion.

Quadriceps exercise was instituted as soon as the wound healed and active motion was instituted in the fourth week after operation. Walking with weight bearing began the sixth week.

The end result is shown as the patient walks with a slight limp. She has complete voluntary extension of the knee to 180 degrees and active flexion of the knee to 60 degrees. The knee is stable and the patella is freely movable. The quadriceps atrophy is completely overcome, and the knee is painless.

This type of procedure was used in this case as it was thought to be the best operation to obtain motion. This is the accepted method of obtaining flexion in knees that are not completely destroyed by disease, as in the postoperative contracture following fracture of the shaft of the femur.

●
Case 2. This case is shown because of the unusualness of seeing a patient with multiple fractures, as well as fractures of all four extremities.

W. D., 63 years, white, carpenter.

Patient was injured on 12-18-'34 in an automobile accident, receiving the following injuries:

Fracture of the shafts of the left radius and ulna.

Fracture of the surgical neck of the right humerus.

Fracture of the shaft of the left tibia into the ankle joint.

Fracture of the left first metatarsal.

Comminuted fracture of the right intertrochanteric region of the femur.

Comminuted fracture of the left intertrochanteric region of the femur.

Comminuted fracture of the right patella.

Patient was admitted to Nassau Hospital in severe shock, for which treatment was instituted. The fracture of the humerus was treated by skin traction. A Kirschner wire was placed through the lower end of the radius and ulna and combined with plaster for reduction of the left radius and ulna. Kirschner wire traction was applied through the right patella and Kirschner wire traction was applied through the os calcis of each foot for the other injuries. Plaster pants were applied to both lower extremities and the patient was discharged from the hospital 2-3-'35. The plaster pants were removed from both lower extremities on 2-28-'35. Plaster was removed from the left forearm 3-28-'35.

Follow-up treatment consisted of active use and physical therapy in the form of hot soaks, massage and passive stretching. The patient as shown 10-6-'36 reveals that he is able to walk with the aid of a cane. His gait is far from normal but enables him to walk three miles daily, and patient states that he will be able to enjoy his hunting trip this fall.

The only complaint at present is in the

lumbosacral area. This is due to the chronic hypertrophic arthritis present, plus the mechanical stress and strain due to his gait. The end results are as follows: Right upper extremity: Motion of the elbow and shoulder is normal. The hand is normal except for the fifth finger, which is held flexed about twenty degrees at the proximal interphalangeal joint.

Left upper extremity: Elbow and shoulder are normal. Forearm shows a marked dorsal curve. Pronation is complete and supination is limited seventy-five per cent. Grip is considerably less than that of the opposite side. Wrist and fingers are normal.

Left lower extremity: There is moderate swelling of the leg. Motion of the toes is fair and motion of the ankle is normal. The knee can be actively flexed to 90 degrees and has complete extension. Actively, patient is able to flex the hip to 80 degrees. Abduction is markedly limited, there being only 15 degrees present. External rotation is complete. Internal rotation is possible to neutral position.

Right lower extremity: There is moderate swelling present. Leg lies in external rotation. Motion of the toes is fair. Motion of the ankle is practically normal. Patient is able to actively flex the hip to 70 degrees. Abduction is possible to 15 degrees. External rotation is complete and internal rotation is limited before the leg comes straight in a neutral position.

PROFESSIONAL BUILDING, HEMPSTEAD, N. Y.

ANALYSIS OF TWO HUNDRED AND FIFTY CONSECUTIVE CASES OF GALLBLADDER DISEASE WITH OPERATIONS

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THE two hundred and fifty consecutive cases analyzed here were operated on by Dr. Carl A. Hettesheimer and me, on our private service, and cover a period of eight years. The analysis was made for the purpose of comparing our statistics with similar series reported from time to time by other surgeons. We also sought to determine what changes, if any, should be made in our in-

dications for operation, and in the technique of performing them, and to clarify the indications which would lead us to open and explore the common duct. We, therefore, offer a statistical report together with certain impressions we have gained, and an analysis of the deaths which occurred.

As to sex the cases were divided as follows:

Female—192 or 76.8%.

Male—58 or 23.2%.

Age—Youngest 14 years, oldest 75 years.

Symptoms—Average duration of symptoms 4½ years.

Jaundice—59 or 23.6% of the cases gave a history of jaundice. Whether or not jaundice had been present in all these cases it was not possible to establish, because of the fact that patients are often under the erroneous impression that they are jaundiced when no jaundice actually exists.

Stones—Stones were present in 179 cases or 71.6%.

Duct Stones—Stones were present in the biliary ducts in 16 cases or 6.4%; in this group there were 4 deaths or 25%.

Hepatitis in varying degrees was found in practically all cases. Although it is contended by some that hepatitis precedes pathological changes in the gallbladder this point could not be established by any observations we were able to make at the time of operation, but we are convinced that the extent of the hepatitis is in proportion to the duration and severity of the pathology in the gallbladder.

Anesthesia—Ethylene ether anesthesia was used almost exclusively in these cases and is our anesthetic of choice.

Surgical Procedures

Cholecystectomy—85.3%.

Cholecystotomy—9.8%.

Two cases had previous cholecystectomies and were reoperated for common duct obstruction.

The common duct was opened and drained in 86 cases or 34.4%.

In *Surg., Gyn. and Obs.*, 59:906, December, 1934, *Clute and Swinton* of the Lahey Clinic report 1,543 cases of surgically treated gallbladder disease in which they opened and drained the common duct in 28%.

In our first one hundred cases the common duct was explored and drained twenty-one times with six deaths.

In our second one hundred cases the common duct was explored and drained fifty times with four deaths.

In our next fifty cases the common duct was explored and drained fifteen times with two deaths.

The mortality from all operative procedures in this series is 4.8%. In those 86 cases of common duct drainage the mortality was 4.6%, in the remaining 164 cases 7.4%.

In a recent article in *S. G. and O.*, Boyce *et al.* report 404 consecutive cases with a mortality of 8.1% and comment that this is exceedingly high.

In an analysis of 36,623 operations for gallbladder disease Heuer reports a mortality of 6.6%.

Associated Pathology

Cholangitis	Carrier
Hepatitis	Renal Calculus
Peptic Ulcers	Duodenal Ileus
Pericholecystic and Periduodenal Adhesions	Ovarian Cyst
Pancreatitis, acute and chronic	Hyperthyroidism
Gallbladder Empyema	Syphilis
Perforation of the Gallbladder	Meckel's Diverticulum
Chronic Myocarditis	Thyroid Adenoma
Biliary Fistula	Acute Appendicitis
Chronic Typhoid	Chronic Appendicitis
	Liver Abscess
	Diabetes Mellitus
	Duodenal Diverticulum

Concomitant Operations

Appendectomies—66 cases.
Gastroenterostomies—9 cases
Pyloroplasties—3 cases
Duodenojejunostomy—1 case
Removal of Diverticulum—1 case
Oophorectomy—1 case
Excision of Cyst—1 case

Postoperative Complications

Bronchopneumonia—3 cases
Pulmonary Embolus—4 cases
Pleurisy with Effusion—2 cases
Separation of Operative Wound—2 cases
Suppurative Pleuritis—1 case
Lobar Pneumonia—1 case
Septicemia—1 case
Hemorrhage from Operative Wound—1 case
Toxemia—2 cases

Cultures from Gallbladder and Bile Ducts

B. Coli communis—16 cases
Streptococcus viridans—12 cases
Staphylococcus aureus—5 cases
Staphylococcus albus—4 cases
Unidentified gram-negative, dextrose-fermenting bacillus—6 cases
Streptococcus hemolyticus—3 cases
B. Lactis aerogenes—3 cases
B. typhosus—2 cases
B. proteus—3 cases
Bargen's diplococcus—1 case
Gram-positive unidentified streptococcus—1 case

Enterococcus—1 case
 Typical gram-negative bacillus—1 case
B. paratyphosus—1 case
B. aspergillus niger—1 case
 Lactobacilli—1 case
B. cloacae—3 cases
B. enteritidis—1 case
B. Mucosus capsulatus—1 case

Nickel and Judd of the Mayo Clinic in *Surg. Gyn. and Obs.* 50:655, April, 1930, analyze 300 surgically resected gallbladders from the standpoint of the bacteriological findings, and state that "The majority of surgically resected gallbladders from patients with acute and sub-acute cholecystitis contain pathogenic bacteria, whereas the majority from patients who have chronic cholecystitis are sterile. The organisms isolated are, according to their frequency, green producing streptococci, Gram-negative bacilli, and staphylococci". This coincides with our findings.

Impressions We Have Gained from Analysis of These Cases

1. Exploration and drainage of the common duct do not increase the mortality in this series; to the contrary it has shown a definite decrease with an increase in the number of times that this procedure has been performed.

Clute and Swinton in *Surg. Gyn. and Obs.* 59:906, December, 1934, state that "It has been our experience that choledochotomy does not increase the mortality of gallbladder surgery. From 1910 to 1934 we have operated 1,543 times for gallstones. In these patients we have opened and drained the common duct 434 times. There have been no strictures of the common duct after operation."

Judd and Marshall of the Mayo Clinic in an analysis of 1,768 cases of stones in the bile ducts state that 22.6% had previous operations on the biliary tract, cholecystotomy being the rule.

2. The phenomenon of so-called "liver death" has almost disappeared with more frequent common duct drainage, our last death from this cause having occurred in 1930. This leads us to the belief that drainage of the common duct when cholangitis exists results in decompression of the liver and the prevention of ascending infection into the bile radicles, which we think is a factor in the causation of "liver death."

3. Cholecystectomy for cholecystic disease with stones yields better results symptomatically than for cholecystic disease without stones.

Graham and Mackey in the *Journal of the A.M.A.* 103:497, November 17, 1934, state that "In the absence of severe pain the beneficial results to be obtained by cholecystectomy in the case of a stoneless gallbladder are likely to be unsatisfactory in approximately 40%. There seems at present to be little justification for the subsection to operation of patients who have only the early beginnings of cholecystic disease, unless one is interested in the prevention of complication. At any rate, the evidence indicates that if one operates on such patients the results will be far from satisfactory in almost half of the cases."

Schmechel in *Zentralbl. f. Chir.* 61:685, March 24, 1934, states that "The prognosis of a cholecystectomy as far as permanent cure is concerned is in proportion to the amount of pathological alterations present at the time of operation. The less pathological alteration in the gallbladder the poorer the results."

4. Following the suggestion of Clairmont we have been passing sounds through the common duct into the duodenum for the purpose of stretching the sphincter muscle to allow any small stones which may have been overlooked to pass into the duodenum.

5. Cholecystectomy is the operation of choice and should be performed as soon as the diagnosis of gallstones is made.

Time of Operation

In operating this group we have taken the position that the interval between attacks offers the surgeon opportunity to utilize the procedure best adapted to effect a cure. That in the acute attack edema and tissue infiltration often prevent more than drainage. There are those who advocate immediate operation in acute cholecystitis. We have not been converted as yet to this belief, but recognize that in the acute attack, where subsidence is not prompt and progressive, operation should be done.

Heuer in the *Annals of Surgery* 99:881, June, 1934, in an analysis of 1,274 cases of acute cholecystitis with operation in the acute stage found a mortality of 8.7%

Harvey Smith in the *Pennsylvania Medical Journal* 37:574, Volume 27, reports a mortality of 10% out of 48 cases of acute gallbladders operated upon.

Zininger reports a mortality of 25% after immediate operation and 6.6% after waiting five days for delayed operation.

Whipple reports a mortality of 13.7% after immediate operation.

Miller reports 13.5% after immediate operation.

Indications for Opening the Common Duct

1. Stones in the common duct.
2. Distended common duct where aspiration shows fine undissolved particles. Aspiration is accomplished by the introduction of a fine gauge needle obliquely through the wall of the common duct into the lumen, through which bile is aspirated into a

5 cc. syringe. No leakage follows the withdrawal of the needle if choledochotomy is not performed.

3. Thickened common duct walls indicating repeated attacks of cholangitis.
4. Numerous stones in the gallbladder, sufficiently small to pass through the cystic duct.
5. Jaundice.
6. Hepatitis with round-edged liver.
7. Pancreatitis as evidenced by induration of the pancreas on palpation.

Analysis of Deaths

F. B.

Male, Age 58.

Admitted to Nassau Hospital March 11, 1932. Had had symptoms for 24 years. Had no history of jaundice. Operation: Gallbladder drained. There were no stones present.

Common duct was not drained. Culture was negative. Patient died suddenly on the 6th day postoperatively of pulmonary embolism.

C. B.

Male, age 38

Admitted to Nassau Hospital April 5, 1934. Had had symptoms for 6 months. Had no history of jaundice. Operation: Cholecystectomy and appendectomy. There were stones present. Common duct was not drained. Culture was negative. Patient had a separation of the abdominal wound on the fifth day postoperative as a result of persistent hiccuping. This was repaired and an ileostomy performed. Patient expired 6th day postoperatively of paralytic ileus.

L. S.

Female, age 42.

Admitted to Nassau Hospital June 1, 1932. Had had symptoms for three years. Had no history of jaundice. Had had gallbladder drained five

months previously. Symptoms recurred and on admission had acute attack with palpable gallbladder. Operation: Cholecystectomy. The common duct was not drained. There were no stones present. Patient died of a "liver death" first day postoperatively. Pathological Report: Chronic Cholecystitis.

B. C.

Female, age 44.

Admitted to Nassau Hospital November 19, 1929. Had had symptoms for 6 months. Jaundiced on third day after admission to hospital. Operation: Drainage of gallbladder. Common duct was not drained. There were no stones present. Culture: *E. Coli communis*. Patient expired on 4th day postoperatively of septicemia. Blood culture negative.

M. L.

Female, age 37.

Admitted to Nassau Hospital December 29, 1929. Had had symptoms for five months. No history of jaundice. At operation the appearance of the liver gave the impression that an acute hepatitis was present. Operation: Cholecystectomy and appendectomy. Common duct was not drained. There were no stones present. Culture was not taken. Death oc-

curred on the 5th day postoperatively of toxemia. Pathological Report: Subacute and chronic cholecystitis.

E. T.

Female, age 57.

Admitted to Nassau Hospital January 2, 1930. Had had symptoms for 14 years. Had no history of jaundice. Operation: Cholecystectomy and appendectomy. There were stones present. The common duct was not drained. Patient had a chronic myocarditis. Expired on 2nd day postoperatively of "liver death."

M.S.

Female, age 43.

Admitted to Nassau Hospital July 15, 1930. Had had symptoms for 3 days. Jaundice 1 day. Operation: Cholecystectomy and choledochotomy. There were stones present in the gallbladder, hepatic and common ducts. Acute cholecystitis, cholangitis and subacute hepatitis. Culture was negative. Patient expired 1st day postoperatively of a "liver death." Pathological Report: Subacute and chronic cholecystitis and cholelithiasis.

M. W.

Female, age 69.

Admitted to Nassau Hospital September 4, 1930. Was admitted 6 months

previously and operated for intestinal obstruction from a large gallstone. Patient had symptoms for two years. Jaundiced last 4 weeks. Operation: Cholecystectomy and repair of duodenum for cholecystoduodenal fistula and choledochotomy. There were stones present. Culture taken showed *B. Lactis aerogenes* and *Streptococcus viridans*. Expired on the 11th day postoperatively of "toxemia" and hemorrhage of operative wound.

M. P.
Female, age 54.

Admitted to Nassau Hospital November 11, 1928. Had had symptoms for four years. Had no history of jaundice. Operation: Cholecystectomy and appendectomy. The common duct was not drained. There were stones present. No culture was taken. Ex-

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pired on 4th day postoperatively of bronchopneumonia.

J. D.

Male, age 57.
Admitted to North Country Community Hospital December 24, 1932. Had had symptoms for 15 years. Had no history of jaundice. Operation: Cholecystectomy and choledochotomy. There were stones present in the gallbladder and common duct. Culture was negative. Patient expired suddenly on the 9th day postoperatively of pulmonary embolism.

W. T.

Male, age 51.
Admitted to Nassau Hospital August 9, 1935. Symptom of painless jaundice for 2 weeks prior to admission. Operation 20 days after hospitalization. Liver found enlarged and colored greenish-black. Gallbladder distended and

walls thickened; contained many stones. Gallbladder drained and common duct explored. It was not obstructed. No bile was present in the common duct; it was drained. Biopsy of liver. Pathological report—Acute cholangitis, cholelithiasis and obstructive jaundice. Culture negative. Patient expired 5th day postoperatively of toxemia.

P. S.

Female, age 50.
Admitted to Nassau Hospital on October 4, 1935. Symptoms for 2 years. No jaundice. Operation: Cholecystectomy and choledochotomy. Stones present in gallbladder and common duct. Pathological report: Acute cholecystitis and cholelithiasis. Culture: *B. cloacae*. Patient expired on 6th day postoperatively of pulmonary embolism.

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ASSOCIATED PHYSICIANS OF LONG ISLAND

115th Regular Meeting, Outing and Dinner. Held Oct. 6th at Nassau Hospital and Wheatley Hills Golf Club. Attended by 75.

The 115th regular meeting of the Associated Physicians was marked by good attendance at the scientific program in Nassau Hospital, Mineola and the dinner at Wheatley Hills Golf Club Tuesday, October 6th. Golfing privileges were available all day for those who chose to play.

The scientific program was presented by

six staff members in the Nassau Hospital's fine new auditorium, as follows:

1. Observations on 250 Cases of Gallbladder Disease, by Dr. Benjamin Seaman, discussed by Dr. Theodore Vosseler.
2. Puerperal Sepsis with Unusual Developments, by Dr. George Granger, discussed by Dr. Harvey B. Matthews.
3. Rupture of Maxillary Gland, by Dr. Henry Smith, discussed by Dr. James M. Smith.
4. Deformity of Knee Corrected by Ben-

nett's Operation, by Dr. Otho Hudson, discussed by J. B. L'Episcopo.

5. Unusual Cases of Leukemia in Same Family, by Dr. Louis Van Kleeck, discussed by Dr. Kenneth Jennings.

6. Agranulocytotic Angina with Recurrences, by Dr. Eben T. Breed, discussed by Dr. George E. Anderson.

In the business meeting, held in the Wheatley Hills Club, 21 candidates were elected to membership, as follows:

Proposed by Dr. Charles C. Murphy.

Dr. Francis Maloney, Jefferson 1932 Hempstead.

Dr. George Carlin, Queens 1927, Amityville.

Dr. W. R. Carman, L. I. C. H., 1930 Islip.

Dr. J. P. Gale, P.&S., N. Y., 1932, Lindenhurst.

Dr. J. E. Muncie, Vanderbilt, 1923, Bay Shore.

Dr. E. R. Nodine, Tulane, 1925, Rockville Centre.

Dr. H. R. Robert, McGill, 1912, Farmingdale.

Dr. P. H. Smith, Georgia, 1924, Babylon.

Dr. R. G. Vaughan, P.&S., N. Y., 1929, Brentwood.

Proposed by Dr. J. L. Sengstack.

Dr. Roger Dexter, Tufts, 1907, Northport.

Dr. C. E. Drysdale, Dalhousie, 1926, Northport.

Dr. T. W. Faulkner, Queen's, 1924, Huntington.

Dr. V. J. McAuliffe, Baylor, 1921, Huntington.

Proposed by Dr. E. M. McCoy.

Dr. M. W. Brown, Kansas, 1926, Babylon.

Proposed by Dr. H. R. Merwarth.

Dr. C. Milton Meeks, L.I.C.H., 1931, Manhasset.

Dr. A. F. Rowsom, Queen's, 1926, Locust Valley.

Proposed by Dr. Alec N. Thomson.

Dr. Irving Gray, Univ. & Bell, 1913, Brooklyn.

Proposed by Dr. Charles A. Anderson.

Dr. Stanley M. King, Albany, 1915, Brooklyn.

Proposed by Dr. Herbert C. Fett.

Dr. Alfred M. Buda, Univ. & Bell, 1920, Brooklyn.

Dr. Frank E. Mallon, L.I.C.H., 1919, Brooklyn.

Dr. Nicholas H. Ryan, Fordham, 1912, Brooklyn.

The amendment was passed to change Article 11, Section 2, to read as follows: "There shall be a board of eleven directors

consisting of the president, the past three living ex-presidents, the first vice-president, the secretary, the treasurer, the chairmen of the scientific, the entertainment and the membership committees, and the executive secretary ex-officio."

An amendment was offered by Dr. Charles Anderson which had the approval of the executive committee as follows: "In the election of candidates for membership, 5 dissenting votes will bar a candidate." This amendment was passed and will be brought up at the annual meeting in Brooklyn, Jan. 30, 1937, for final adoption.

Dr. Travis appointed as an auditing committee Dr. Edwin Griffin, Chairman, Dr. Thomas Brennan and Dr. Langworthy, and as a nominating committee Dr. Herbert Fett, chairman, Dr. A. M. Bell, Dr. Draffin and Dr. Charles Murphy. These committees will report at the meeting Jan. 30, 1937.

The speaker of the evening was Mr. Joseph Allan Dunn, a prominent explorer and journalist who is particularly well known for his penetration of the interior of New Guinea before white men were known there. He told how he invariably won the respect of the wizard of each tribe of head hunters by amazing them with a common match. Each time he lit his pipe with an ordinary match it was an act which attracted awe. Mr. Dunn kept his audience of Associated Physicians equally in awe as he narrated his experiences as an explorer and particularly as he described the medicine men and their witchcraft.

ANNUAL MEETING

to be held

Jan. 30, 1937, in Brooklyn with
Clinical Day at St. John's Hospital
Dinner at Granada Hotel.

DISAPPEARANCE OF THE PHYSICAL SIGNS OF RHEUMATIC HEART DISEASE

According to EDWARD F. BLAND, T. DUCKETT JONES and PAUL D. WHITE, Boston (*Journal A. M. A.*, Aug. 22, 1936), it is well known that the signs of valvular disease which appear during rheumatic fever or later usually persist throughout life and often progress during subsequent years. It is less well known, however, that these signs of cardiac involvement may occasionally regress and ultimately disappear.

Contemporary Progress

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Rhinolaryngology

Red Blood Cell Sedimentation Rate in Chronic Sinusitis, Chronic Tonsillitis, and Dental Periapical Infections

● R. M. LINTZ (*Journal of Laboratory and Clinical Medicine*, 21:1259-1264, September, 1936) notes that the significance of the sedimentation rate of the red blood cells is recognized today as an index of the activity of the infection in tuberculosis and gynecological conditions. But there has been very little study of the sedimentation rate in chronic focal infections in the nose and throat. The author has made a study of the red cell sedimentation rate by the method of Rourke and Ernstone in 30 cases of chronic sinusitis, 13 cases of chronic tonsillitis, 5 with both chronic sinusitis and chronic tonsillitis, and 27 cases with dental periapical infection. In the attempt to eliminate from this study patients with other conditions known to affect the sedimentation rate, a history was taken and a general physical examination made, but no "detailed laboratory procedures" were carried out. Of the total of these 75 cases, 69, or 92 per cent, had corrected sedimentation indices within normal limits; of the 6 patients with a sedimentation index above normal, the highest reading was 0.6 and this is not a marked increase. The author is of the opinion that a more detailed study of these 6 patients would also show some other condition accounting for the moderate elevation of the sedimentation index. He concludes that chronic sinusitis, chronic tonsillitis and chronic periapical infection do not affect the sedimentation rate of the red cells.

COMMENT

This procedure is of no more value in

the conditions mentioned than in diseased conditions in other parts of the body.

H. H.

Milk Injection for Pharyngeal and Laryngeal Infections

● W. C. DENISON (*Laryngoscope*, 46:642-644, August, 1936) notes that a few years ago he saw a case of severe pharyngeal and laryngeal infection due to *Streptococcus hemolyticus* with swelling and edema, accompanied by fever and general malaise. An intramuscular injection of whole boiled milk (10 c. c.) was given, and in a few hours the patient's general condition had greatly improved, and the edema of the throat was rapidly subsiding. Since that time he has used milk injections "with very satisfactory results," in a number of cases with acute pharyngeal and laryngeal infections due not only to streptococci, but also to staphylococci, pneumococci of various types, and *Micrococcus catarrhalis*. Pneumococci and streptococci, especially the latter, produced the most severe hyperemia and edema. When first using the treatment, the author made a dermal test, injecting one drop of the milk subcutaneously to determine whether the patient was sensitized to milk, but he has found this to be an unnecessary procedure. The technique for giving the milk injections is very simple. Whole cow's milk is boiled for three minutes, 10 c. c. drawn into a Luer syringe and injected intramuscularly into the buttocks through a needle with "a fairly good-sized lumen;" with children under eight years of age, the dose is 5 c. c. instead of 10 c. c. He has never observed any ill effects from this procedure; occasionally there has been an increase in temperature lasting only a few hours. If the patient has not shown a definite im-

provement, another injection is given in twenty-four hours; in some cases the interval has been forty-eight hours. Three injections have been the maximum required in any case.

COMMENT

Although the value of milk injections has been recognized for some time, particularly by the ophthalmologist, we feel that there are various manufactured non-specific proteins which will give equally as beneficial results. For years we have administered these proteins in various types of mild infections. It is definitely understood that their chief value lies in increasing the resistance of the patient.

H. H.

Moccasin Snake Venom Therapy for Recurrent Epistaxis

● J. L. GOLDMAN (*Archives of Otolaryngology*, 29:59-67, July, 1936) reports the treatment of 42 patients with recurrent epistaxis by subcutaneous injections of moccasin snake venom. The venom was diluted to 1:3,000; the initial dose was 0.5 c.c. in adults and 0.3 c.c. in children, which was rapidly increased to a maximum of 1 c.c. for adults and 0.8 c.c. for children. Patients were given two injections weekly for variable periods until the bleeding was well controlled. In some cases a "maintenance dose" of an injection every one or two weeks was necessary. Some of the patients developed local reactions due to hypersensitivity; no systemic symptoms were noted. They were successfully desensitized by using small doses of the venom solution, beginning with 0.1 c.c. and increasing by 0.1 c.c. up to 0.6 c.c., and then by 0.2 c.c. up to the maximum dose of 1 c.c. There were 13 patients with telangiectasis of the nasal septum; 15 with ulceration of the nasal septum; 12 without visible source of bleeding; and 2 with hemangioma. In all cases the nasal bleeding was either completely arrested and controlled, or else markedly diminished in amount and frequency. In the cases with ulceration, the lesion healed in 9 cases and in 2 others showed marked improvement; in one of the cases with hemangioma, the lesion showed complete atrophy, and in the other a marked diminution in size. In the latter case the patient required a "maintenance dose" of the venom for more than a year. Two of the patients with telangiectasis were also given a "maintenance dose" for a similar period. No other adjuvant treat-

ment was given in these cases in order to evaluate the snake venom therapy properly; but in the regular care of patients with recurrent epistaxis any sinus infection should be treated, deviated septum corrected, and obvious bleeding points cauterized. The snake venom, however, is "an additional and valuable therapeutic agent" in such cases.

COMMENT

Anything which will help us to combat severe nasal hemorrhage is worth while knowing about. Snake venom has been advocated for some time. We venture to say that the majority of the cases mentioned by the author would have been relieved by the other methods which have been used for years. Of most importance is to attack the bleeding point locally. Sometimes this spot cannot be found, either because it is too far back in the nose or behind an obstruction. A valuable aid is the electrocautery, which easily destroys the bleeding vessel or vessels.

H. H.

Treatment of Paroxysmal Sneezing

● FRANK COKE (*Journal of Laryngology and Otology*, 51:522-526, August, 1936) states that paroxysmal sneezing may occur in prolonged attacks with watery discharge and blocking of the nostril, causing the patient much discomfort and disability, and requiring treatment. Such paroxysmal sneezing may be due to allergic or microbic factors of primary vasomotor disturbances. If allergic, the paroxysms may be of the seasonal hay fever type, or may occur all the year around and be due to other inhalants than pollen or to foods. The offending proteins must first be determined, and treatment instituted accordingly, either by avoidance or by specific desensitization; the author notes that he has also found the Dansyz or mixed coliform vaccine, "preferably autogenous," of great value for non-specific treatment in these allergic cases. In cases of the second type due to chronic infection, a swab must be taken to determine the organisms present in the nose or sinuses. In these cases, a full "pathogen selective test" with the patient's blood should be made, and a vaccine prepared from the strains against which the blood "has no resistance." The author has found treatment with such vaccines very effective in cases of this type. In cases of paroxysmal sneezing due to vasomotor disturbances, the author has found intravenous injections of collosol manganese

in 20 minim doses are sometimes effective; but the treatment of most value is local ionization with zinc. Small pieces of cotton wool soaked in 1 per cent zinc chloride are packed in the nose so as to be in contact with the whole surface of the middle and lower turbinates; a current of 5 milliamperes is then passed through this packing for ten minutes. Four treatments are given at intervals of ten days to a fortnight and usually result in complete and apparently permanent relief from the attacks.

COMMENT

Much has been written on this subject during the past five years. The author claims that zinc ionization is of the most value. Regardless of causation, we know from our own experience that ionization has cured over 80% of our cases. A word of caution should be given here. Dr. L. W. Dean, in a recent address, stated that certain permanent pathological changes take place in the nasal mucosa after ionization with a tendency toward an atrophic rhinitis. Another word of caution. Do not ionize in the region of the cribriform plate or an anaemia may result.

H. H.

Tuberculous Adenoids

● F. J. COLLET (*Annales d'oto-laryngologie*, No. 6:565-569, June, 1936) reports an illustrative case of tuberculous adenoids in a girl sixteen years of age, who had recently lost weight, and on X-ray examination showed slight increase of the hilus shadows. There were a few enlarged cervical glands; and examination showed adenoid growths of moderate size, and a single enlarged gland on the posterior wall of the pharynx. The adenoid growths were removed and later the pharyngeal gland; both proved to be tuberculous on guinea-pig inoculation. The author notes that the percentage of cases in which adenoid growths have proved to be tuberculous is variously stated by different investigators; the majority incline to estimate 2 to 2.5 per cent. As a rule, there is some indication that the patient is tuberculous—as in the author's case—loss of weight, enlarged cervical glands, a family history of tuberculosis, or signs of pleurisy or lung involvement. Occasionally the author has observed postoperative complications indicating the lighting up of a tuberculous focus after the removal of adenoid growths in patients apparently free from tuberculous infection—such as tuberculous

pleurisy, Pott's disease, or apical involvement; but this, he states, is very rare. The occurrence of a single enlarged gland on the posterior pharyngeal wall in association with tuberculous adenoid growths is an unusual anomaly.

COMMENT

Tuberculous adenoids are a rarity. With tuberculosis of the lungs, one may expect an associated tuberculosis of almost any part of the throat. This brings up the point, however, that the nasopharynx is seldom examined as carefully as it should be. This can only be done with a nasopharyngoscope or pharyngoscope. Yankauer, in former years, frequently laid stress on a suppurative buritis in the vault of the pharynx which gave rise to many general symptoms.

H. H.

The Antrum Operation

● E. C. SEWALL (*Laryngoscope*, 46:493-499, July, 1936) describes a technique for the antrum operation by which a permanent opening is obtained to maintain drainage. The usual Caldwell-Luc technique is carried out; the antrum is packed with vaselined gauze that is teased out gently in the first postoperative days. The patient is taught to take a mouthful of warm saline solution and force it out through the nose by closing the lips. In a short time the opening begins to contract; then a special rubber tube is placed in position; the tube is about 3 cm. long with the ends flattened at right angles to each other. The tube is placed so that the outer end lies outside the bony opening and under the lip, the inner end in the antrum. It is self retaining, can be removed, cleansed and replaced; it is "hollow for drainage and soft for its pressure on the soft parts." The tube may be left out when the opening is completely epithelialized. The openings thus made and maintained are, it is true, "a nuisance" to the patient; they may be covered by various prostheses. The patients, however, learn to manage fairly well, free drainage is maintained, and serious disease is relieved. In some cases, the openings may be closed after a time, if "conditions warrant." The author has used this method in 14 cases, chiefly where reoperation was necessary, when the Caldwell-Luc method had failed to give relief; and also for other cases that presented unusual difficulties. The author has been pleased with results, and finds it "hard to advise any less certain procedure."

COMMENT

Regardless of our personal admiration for Dr. Sewall, we wonder how often it is necessary to resort to the procedure he mentions. The rhinologist could take a leaf out of the book of the oral surgeon, who sees many antrum infections and operates upon them very cleverly, often without making any counteropening into the nose.

Otology

Acoustic Tumors Within the Internal Auditory Meatus

● E. P. FOWLER, Jr., (*Laryngoscope*, 46:616-627, August, 1936) presents 4 cases of acoustic neurilemoma studied pathologically at the Columbia Presbyterian Medical Center. In the first case, the patient died of peritonitis complicating appendicitis, and had had no auditory symptoms during life other than tinnitus. The presence of an auditory tumor was not suspected; but microscopic section of the temporal bone showed a tumor measuring 2 mm. in its longest diameter at the upper edge of the internal auditory meatus; while the cellular structure was not entirely typical of neurilemoma, the tumor arose from the nerve trunk and strongly resembled the acoustic tumor type. In the second case, the patient had syphilis, but the cause of her death was not well understood "even after autopsy." She had suddenly become deaf in one ear four years before; audiometric examination showed complete loss of hearing in this ear. There was no history of vertigo, and caloric and rotation tests were not made. Autopsy showed no gross lesion of the ear, but microscopic examination showed a small tumor involving the base of the modiolus and extending 3 mm. into the internal canal, the main part of the growth showing the typical structure of neurilemoma. In the third case, the history was more typical, as the patient had had tinnitus and slight deafness for five years; and attacks of nausea and vomiting followed by mild dizziness and tingling in the right hand for several months. Examination showed signs of increased intracranial pressure, nystagmus on looking to the left, deviation of the tongue to the right. There was complete loss of vestibular function on the affected side, and audiograms showed loss of hearing on this side, especially for the high

notes. Autopsy showed a typical neurilemoma arising in the internal auditory meatus and invading the cerebellopontine angle. In the fourth case, the symptoms were still more typical of acoustic tumor, with tinnitus, deafness, vertiginous attacks, right lower facial paresis, and bilateral involvement of various other cranial nerves, with weakness on the left side of the body. Autopsy showed the internal auditory meatus practically filled with a fibrous tumor of the neurilemoma type, and a large cerebellopontine angle tumor of the same structure. These cases show that in the early stages of acoustic neurilemoma, the characteristic clinical syndrome is not present, the nature of the early symptoms depending on the exact location in the nerve of the original growth. Every case of tinnitus and nerve deafness, the author states, "is suspect for an acoustic tumor" and should have audiograms made and careful vestibular examination. No otosclerotic foci were found in the temporal bone in any of these cases, which tends to cast some doubt on the hypothesis of Gray that the bony changes of otosclerosis are caused by degenerative processes in the eighth nerve itself.

COMMENT

Dr. Fowler has done some research work which should be highly commended. It is seldom anyone can collect as many cases of acoustic tumor as he has. Naturally one wonders how often an accurate diagnosis can be made and also whether it is possible to perform an operation which would give the patient any relief.

H. H.

Effects of Bacterial Toxins in the Middle Ear

● E. L. ROSS and R. W. RAWSON (*Archives of Otolaryngology*, 24:51-58, July, 1936) note that while the symptoms of acute infection of the middle ear are well known and it is recognized that bacteria may produce destructive processes in bony and soft tissues followed by fibrous repair, the possibility that bacterial toxins in the middle ear may reach the endings of the eighth nerve and produce functional changes does not seem to have been much discussed. Experiments were carried out on dogs, in which toxins of hemolytic streptococci, staphylococci (*aureus*), pneumococci and of the organisms of scarlet fever, tetanus and diphtheria were injected into the middle

ear, and kept there for half an hour. Observations were made on gait, position, nystagmus, responses to rotation, caloric and hearing tests. The toxins of hemolytic streptococci, staphylococci, pneumococci and of the organisms of tetanus had no effect on vestibular function; the toxin of scarlet fever reduced the reaction to rotation slightly; but the toxin of diphtheria destroyed the vestibular function and also caused complete deafness. Clinical findings, however, indicate that the toxins of any organisms causing otitis media may affect the vestibular and auditory nerves. The toxins of the organisms in otitis media are present in the middle ear for a much longer period of time than in the experiments described, and much greater absorption would undoubtedly result, even though the hyperemia and exudation associated with the infection would tend to delay absorption. In cases of progressive deafness and vertigo, a careful search for bacteria in the middle ear is indicated; if anaerobic bacteria are found to be present, the condition would probably be improved at least temporarily by inflation and aeration of the Eustachian tubes.

COMMENT

Bacterial, as well as other toxins, either local or in the general blood system, may give rise to changes in the internal ear and auditory nerve. It is only natural that the toxin in diphtheria should have a more severe result than any of the others tried. What interests us most is that there is a possibility that definite toxins are formed from bacteria during an acute infection of the middle ear. Whether these toxins exercise a permanent influence cannot be stated, but there is sufficient evidence to state that the reason some patients recover completely, and others have severe trouble later on, is because of the intensity of the toxin. We cannot see how anyone can search for bacteria in the middle ear in cases of progressive deafness or vertigo.

H. H.

Roentgen-Ray Therapy in Chronic Purulent Otitis

● Z. G. RABINOVITCH (*Revue de laryngologie, otologie, rhinologie*, 57:669-689, June, 1936) reports the use of Roentgen-ray therapy in the treatment of 280 cases of chronic purulent otitis media of over one year's duration; and 19 cases of postoperative fistula and 17 cases of delayed wound

healing after the mastoid operation. Small doses of the Roentgen irradiation were employed with 120 kv. and 25 per cent the skin erythema dose in children and 30 per cent the erythema dose in adults, with a 6 x 8 cm. field over the temporal bone. Treatments were given at intervals of ten days, four treatments to a series, with four weeks between series. Not more than three series of treatments were given. In 52 of the 280 cases, complete cure was obtained (18.6 per cent); 57 other cases, a definite improvement (20 per cent); in 171 cases the condition was unchanged. The best results were obtained in cases with involvement of the attic, in which type surgical intervention is most frequently necessary because of carious processes in the bone. In the postoperative cases the treatment was found to be very effective in healing fistulas and hastening the cicatrization of wounds. The author recommends that Roentgen-ray therapy be given a trial in every case of chronic otitis media in which conservative treatment is desirable; in cases where the surgeon cannot remove all the purulent focus (for example, where there is danger of injuring the labyrinth); in cases where there is a carious process in the bone; and in the treatment of postoperative fistulas and delayed healing of wounds.

COMMENT

Chronic purulent conditions of the middle ear are sometimes a serious menace to life. Frequently a radical mastoid operation is advised. It is our feeling that such an operation is unnecessary unless a cholesteatomatous condition is present. We welcome any suggestion for palliative or conservative treatment. X-ray therapy has been administered in many nose, throat and ear conditions but mainly to reduce glandular affections. It is seldom that the x-ray treatment has any appreciable effect on an infectious process. It is possible, in these cases, that the good results come about by the reduction in the amount of granulation tissue.

H. H.

The Vasomotor Control of the Ear

● PHILIP FRAZER (*Journal of Laryngology and Otology*, 51:579-586, September, 1936) notes that only recently has cervical sympathectomy been advocated for certain aural conditions, chiefly vertigo and tinnitus, which are alleged to be the result of vasospastic conditions in the internal ear.

The author reports experiments on animals (cats) by a special dye injection technique, to determine the route taken by the vasoconstrictor impulses to reach the middle and internal ear. It was found that stimulation of the stellate ganglion produces vasoconstriction in the external, middle and internal ear; the same effect was obtained as far as the internal ear was concerned by stimulation of the superior cervical sympathetic ganglion or the cervical sympathetic trunk. Decortication of the internal and external carotid arteries did not affect these results. If the cervical sympathetic trunk is severed, no vasoconstriction occurs in the ear on stimulation of the stellate ganglion. From these findings, the author concludes that the internal ear "can be completely deprived of its vasoconstrictor impulses" by cutting the cervical sympathetic trunk; a portion of this trunk should be removed to prevent regeneration of fibers. The more difficult operations of excision of the superior cervical sympathetic ganglion or of the stellate ganglion may be employed, but "there is no reason to suppose that these procedures would be more effective than simple excision of a portion of the cervical sympathetic trunk." Decortication of the carotid arteries or of the vertebral artery is not indicated.

Physical Impairments of Deaf Children

● G. L. DRENNAN (*Illinois Medical Journal*, 70:254-256, September, 1936) reports a study of 58 children entering the Illinois School for the Deaf in the past school year. Of these 23, or 39.65 per cent, were congenitally deaf, and in 33, 56.9 per cent, the deafness was acquired. In the cases of acquired deafness, the most frequent cause was meningitis; the second place was taken by whooping cough; and the third by measles; 64 per cent of the entire group became deaf before two years of age. A study of this entire group of 58 children from the viewpoint of general physical defects, exclusive of deafness, the author states "presents an interesting challenge." Ninety per cent of the entire group showed some physical defect, and in 80 per cent the defect was of such a nature as to require medical attention. In order of frequency these defects were: Tonsillitis with marked enlargement of cervical lymph nodes; malnutrition of a severe type; rickets, both healing and active; rheumatic heart disease; chorea; con-

genital syphilis; and other miscellaneous conditions. Of the group who were deafened by two years of age all showed some marked physical defects besides the deafness. The prevention of such physical defects must antedate school age, and depends largely upon proper care in infancy and early childhood, including scientific feeding, vitamin administration, etc., and immunization against such infectious diseases as diphtheria, scarlet fever, and smallpox.

COMMENT

A survey of children in the school for the deaf always brings out some very interesting points. That these children suffer from defects other than deafness is not surprising. We venture to say that any group of children of preschool age, belonging to the lower class of society, would also show physical defects. From the observations given, we are forced to the conclusion that the school should have remedied many of these defects before the author made the examination. There is no excuse for tonsillar infections, malnutrition or rickets in a well run institution in which the children have been domiciled for quite a few years. Unfortunately the correction of these defects will seldom result in any improvement in the ear condition.

H. H.

Gynecology

Carcinoma of the Cervix in Women Younger Than Thirty Years of Age

● WILLIAM NEILL, Jr., (*Southern Medical Journal*, 29:940-941, September, 1936) notes that carcinoma of the cervix occurs most frequently in women forty to fifty years of age; it is rare in women under thirty. At the Howard A. Kelly Hospital of Baltimore, Md., 2,930 cases of carcinoma of the cervix have been observed since 1913; of these patients, 86 were under thirty years of age, 2.9 per cent. The youngest patient was only sixteen years of age; all the others were over twenty; 59 had borne children. Of this entire group of 86 cases, 30 were operable (a percentage of 34.9). In 17 of this operable group a panhysterectomy was done followed by postoperative radiation; all of these patients died of the disease, none living longer than twenty-eight months. Thir-

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teen of the 30 operable cases were treated by radium and X-ray therapy without operation; 4 of these patients are alive and well for periods of five years or more; 5 others lived three to four years; 2 of these are still alive and well and under observation. In the 56 inoperable cases, in which the disease was obviously extensive with broad ligament infiltration and fixation, irradiation treatment was carried out in all "except the apparently moribund." There was relief of discharge, bleeding and pain in almost every case and life was prolonged from two to thirty months. In addition one patient lived "comfortably" for three years, but died of the disease; one is living without symptoms for two years; one was well and apparently free from disease for four years, but can no longer be traced. Comparing the results in the operable cases with the results obtained at the Hospital for operable cases at all ages (five year cures in 54 per cent), it is evident that the prognosis for young women with carcinoma of the cervix is "definitely worse" than for older patients. The results indicate that radiation "with the main reliance placed in radium" is the treatment that gives the best results in these cases.

COMMENT

The old axiom regarding cancer in young people should always be kept in mind—it is "the younger the patient the more malignant; the more rapid the growth; and the earlier the metastases."

Radium and deep x-ray therapy is the only hope except for the very early, more or less localized lesions, which are better radiated and operated.

Early diagnosis is the only answer in such cases and this depends upon two factors: 1. knowledge of cancer on the part of the patient so that early advice is sought; 2. education on the part of the doctor so that he is constantly on the lookout for cancer.

The commentator is a firm believer in more and better propaganda about cancer. Fight cancer with knowledge! is a slogan to spread all over the universe. Doctors please take notice!

H. B. M.

Uterine Carcinoma Following Radiotherapy for Benign Lesions

● G. I. STRACHAN (*Journal of Obstetrics and Gynecology of the British Empire*, 43: 749-754, August, 1936) states that he has found the result of radium treatment in the

so-called metritis or fibrosis uteri to be excellent; with a dosage of 2,400 to 3,000 mgm. element hours, hemorrhage is controlled and permanent amenorrhea obtained in 95 per cent of cases. He reports 2 cases of this type in which the original lesion was definitely proved to be benign (by curettage) in which carcinoma of the uterus developed after successful radium treatment. A review of the literature shows only very few similar cases reported. The 2 cases reported were quite dissimilar. One patient was twenty-four years of age, the other forty-five; the carcinoma developed seven years after the radium treatment in one case, and two years after treatment in the other. In one case the carcinoma was localized in the uterus, in the other, it extended rapidly to the abdomen. From a study of these cases the author finds no evidence that the radium in any way predisposed the endometrium to the development of a malignant lesion. As carcinoma of the body of the uterus commonly occurs after the menopause, it "seems justifiable to assume that the factors which operated in the production of carcinoma in these two cases after the artificial menopause are similar to those which obtain after the normal menopause." It is evident, however, that the use of radium for the treatment of non-malignant hemorrhage does not protect the patient from the possible later development of intrauterine carcinoma, as, of course, hysterectomy does. The risk of such subsequent carcinoma is "extremely slight," and does not, in the author's opinion, indicate the abandonment of radiotherapy in favor of hysterectomy in such cases. It is important to determine definitely that the original lesion is non-malignant by microscopical examination of specimens obtained by curettage. This is the author's practice and has occasionally resulted in the identification of an unsuspected uterine carcinoma.

COMMENT

Radium in benign uterine lesions is a very satisfactory therapeutic agent but it is by no means a panacea. Properly used where indicated, it produces almost perfect results.

Trouble arising from the use of radium is likely to be due to: 1. lack of accurate diagnosis; 2. lack of keen appreciation of its indication and therapeutic use. In every case where the question of the use of radium arises, there should be an accurate diagnosis made and a strict adherence to the indications for its use. If this is done, success is pretty sure to follow.

The occurrence of carcinoma of the body of the uterus, following the use of radium, I think is very rare. In many hundreds of such cases we have seen only two cases. In the light of our present knowledge, the question of whether the use of radium has anything to do with the development of cancer must remain unanswered.

H. B. M.

Hydrogen Ion Concentration of Human Vaginal Discharge

● F. W. OBERST and E. D. PLASS (*American Journal of Obstetrics and Gynecology*, 32:22-35, July, 1936) note that it is generally accepted that the vaginal discharge is acid in reaction, but little attention has been paid to its hydrogen ion concentration. These authors made 177 determinations of the hydrogen ion concentration of the vaginal secretion in nonpregnant and pregnant women, with normal and with pathological discharges. A quinhydrone micro-electrode was used to permit the determination of the pH of a small amount of vaginal discharge collected directly from the vaginal wall without dilution or contamination. It was found that the pH of the vaginal secretion varies with the character of the vaginal flora, the higher acidities occurring with a preponderance of the Döderlein bacilli. The vaginal secretion in normal women is "quite acid" (pH 4.0 to 4.5) in the intermenstrual period, but the pH rises to the neutral point, or even above, in the early days of the menstrual flow. The actual flow of blood may be responsible for this change in the reaction. In normal pregnant women the range of values and the average pH is somewhat higher than in normal nonpregnant women; in pregnant women with an abnormal discharge, the acidity of the vaginal secretion is still further reduced, and this is to be considered a direct result of the infection. The pH of the upper or posterior vagina was usually slightly lower than that of the lower or anterior portion. The authors conclude that: "The reaction of the vagina is normally acid but the degree of the acidity varies with the character of the flora as well as with the physiologic changes induced by menstruation and gestation."

X-Ray Therapy of Tuberculosis of the Female Reproductive Organs

● M. LENZ and J. A. CORSCADEN (*American Journal of Surgery*, 33:518-522,

September, 1936) report that of 1,296 cases diagnosed clinically as chronic salpingitis at their clinic, 61 were considered to be tuberculous salpingitis. In 10 cases this was associated with tuberculosis of the endometrium and in 6 with tuberculosis of the ovary. An intensive microscopic study of specimens from 850 cases of chronic pelvic inflammatory lesions showed 41 cases of tuberculous salpingitis; in 23 of these the process was limited to the tubes. From a review of "some thousand cases" reported in literature and the results in a small series of cases of their own treated with the x-ray, the authors conclude that x-ray therapy is a valuable agent in the treatment of tuberculosis of the female generative organs. In the presence of severe pulmonary tuberculosis, constitutional treatment is most important, and local x-ray therapy must be "applied with great caution," if at all. But where the pelvic lesion is the chief, or only discoverable, tuberculous focus in the body, local treatment is indicated. X-ray therapy, the authors have found, gives the best results in cases with no ascites and without marked caseation. The x-ray treatment is also of value as a postoperative measure in cases with ascites. The artificial menopause induced by the radiation is usually desirable, but this point should be given special consideration in each case. The technique recommended is: x-ray 200 kv., filter 0.5 mm. Cu plus 1 mm. Al., 50 cm. target skin distance; 75r given each treatment over one anterior abdominal field, once every week or every two weeks, according to the patient's reaction. After a few treatments, there is usually diminution of pain and slight shrinkage of the mass. In obese women or if the anteroposterior pelvic diameter is unusually large, the same dosage may be given through a corresponding posterior field. The total number of exposures varies according to the results obtained, but is usually not less than ten.

COMMENT

X-ray therapy in female pelvic tuberculosis, especially tuberculous salpingitis, is very satisfactory. It should be more often used. However, here as elsewhere, the Roentgenologist and the gynecologist should cooperate in its administration, for much damage may be done by its improper application. Another example of how closely all branches of medical science are interwoven and dependent upon every other branch. But all Nature is that way!

H. B. M.

Ovarian Function and Occurrence of Menopausal Symptoms Following Hysterectomy

● RUDOLPH MARX and his associates (*Surgery, Gynecology and Obstetrics*, 63: 170-177, August, 1936) report a study of the prolan-A and estrin in the urine of women after hysterectomy in relation to the development of menopausal symptoms. In 8 cases in which total hysterectomy had been done between the ages of thirty-three and thirty-eight, studies made in an average time of less than seventeen months after operation (only one case three years after operation) showed 6 of these cases had an increase of prolan in the urine, and 4 a decrease of estrin; 5 of these patients had "hot flushes;" 4 of them showed increased prolan output, associated in 3 cases with decreased estrin output; one only showed normal prolan and estrin. In 9 cases in which supravaginal hysterectomy was done at an average age of thirty-three and a half years, the study was made more than three years after operation in all but one case. Four of these 9 cases showed an increased prolan output, and 5 a decrease in estrin; only 2 of these 9 patients had "hot flushes;" one of these showed the hormone picture "typical of established menopause" and in the other complete ovarian and pituitary failure was apparent. In 4 other cases in which supravaginal hysterectomy had been performed after the age of forty years, 2 showed a normal estrin output and no prolan three years after operation. From these findings the authors conclude that the "hormonal picture" and the clinical symptoms of the menopause appear earlier and are more marked after total hysterectomy than after supravaginal hysterectomy. These studies seem to support the theory that the uterus "elaborates a catalytic principle acting upon some part of the pituitary-ovarian hormonal mechanism, regulating its normal balance and functional harmony;" and indicate that the preservation of even a small part of the uterus has a retarding effect on the appearance of retrogressive changes in the pituitary-ovarian function and the occurrence of menopausal symptoms. While it is true that the occurrence of "hot flushes" after hysterectomy is associated in almost every case with increased prolan output and often with decreased estrin, yet an increase in prolan and a decrease in estrin may occur separately or in association without the appearance of "hot flushes."

COMMENT

Studies in conservation of the ovaries following hysterectomy have been going on for many years. In 1918, Polak published our results at the Long Island College Hospital. It was our opinion then, as it is now, that over 35 to 40 years of age, except in special cases, there is very little gained in conserving the ovaries after hysterectomy. Their life history, on the average, is only two to three years, during which time cystic changes and malignancy are always potentially if not actually present. We have re-operated many cases for ovarian cyst and several for malignant ovarian tumor. So what! The question of leaving sufficient uterus with its endometrium to produce some kind of menstruation, of course is quite a different matter. But who does this? If a patient needs hysterectomy, she needs hysterectomy and not amputation of the fundus uteri. Yes, there are a few bad chronic pelvic inflammation cases in young women in which we elect to do fundectomy with conservation of ovarian tissue. This again is a different story.

There is not the slightest doubt, as the authors conclude, "that the uterus elaborates a catalytic principle acting upon some part of the pituitary-ovarian hormonal mechanism, regulating its normal balance and functional harmony." Where there is present ovarian tissue this is exactly as nature had arranged in the beginning.

H. B. M.

Obstetrics

Pelviccephalography

● R. P. BALL (*American Journal of Obstetrics and Gynecology*, 32:249-257, August, 1936) describes a method determining the volume ratio between the fetal cranium and pelvic diameters. The data are obtained from roentgenograms in the anteroposterior view with the patient supine and in the lateral view with the patient in the lateral recumbent position; or both views may be taken with the patient standing. With one additional exposure in the anteroposterior view, the films can be examined stereoscopically. The volume of the fetal skull is determined by measuring the circumference of the film images, and calculating the volume from a table showing the volume of a sphere from its circumference measurement. The measurement of

two pelvic diameters—the true conjugate and the bisischial spine—are used for the calculation of the volume capacity of the pelvis according to a second table, showing the volume of a sphere from a diameter measurement. The ratio of the mass volume of the fetal head (the “passenger”) to the volume capacity of the pelvic “passage” is then expressed in units of volume milliliters. All measurements on the film are corrected for magnification by the use of a calculator. From a series of cases examined by the author, it has been found that if the volume of the unengaged fetal head is 150 ml. greater than the volume capacity of the true conjugate diameter there is a true disproportion. In marginal cases the architecture of the pelvis in relation to the mechanism of labor must also be considered. The author also suggests a classification of types of pelvis based on the relation of the true conjugate and bisischial spine diameters, using the former as the numerator and the latter as the denominator of a fraction. If the two measurements are within 5 mm., it is called a *one pelvis*; if the numerator is greater by more than 0.5 cm., a *one-plus pelvis*; and if the denominator is the greater, a *one-minus pelvis*. A gynecoid pelvis is a *one pelvis*; a platypelloid or flat pelvis a *one-minus*; and the android pelvis, *one-plus*. A comparison of the types of pelvis and position and presentation of the fetus in southern whites (natives) and Negroes shows little racial difference in the presentations, but that the *one-plus pelvis* is most frequent in whites (48 per cent.), and the *one pelvis* in Negroes (50 per cent.).

COMMENT

Manual pelvimetry is fast becoming obsolete. And rightly so, for no two persons can ever measure the distances between two points and have exactly the same figure under all conditions. For this reason x-ray pelvimetry is fast coming to the fore and, but for the complicated mechanism involved, would be in universal use today. However, with what has been accomplished and what will be accomplished in the near future, x-ray pelvimetry is “just around the corner” for everyone doing obstetrics.

Pelviccephalography, as devised by Ball, is said to be a workable and dependable method of pelvimetry. Certainly it is much simpler than any other method so far devised. Those who have tried it out speak highly of its simplicity and accuracy. Your commentator has had no experience with the method.

H. B. M.

Eclamptic Therapy

● J. R. REINBERGER and PERCY B. RUSSELL, Jr., (*Southern Medical Journal*, 29:841-849, August, 1936) present a study of the methods of treating eclampsia and pre-eclampsia as evolved at the Department of Obstetrics of the University of Tennessee, in the past nineteen years. From 1916 through 1922, the treatment of eclampsia was regarded as primarily surgical, and from 1923 through 1929 as primarily medical. Since 1929, surgical interference has been resorted to when there was not a prompt response to medical therapy. While the mortality of eclampsia is still too high, it has been definitely reduced by the adoption of the latter method and is still falling in this Department. A trial of medical treatment is indicated in every case, and will be successful in the majority, permitting many cases to be carried to term. If there is no improvement in two to four hours, and especially if symptoms of the “endpoint syndrome denoting the failure of medical therapy” develop, surgical interference is considered to be indicated. This period of warning symptoms has been designated as “the break.” This syndrome consists of: (1) increase in temperature, pulse and respiration; (2) evidence of pulmonary edema; (3) increased cyanosis; (4) marked oliguria or anuria; (5) increase in blood pressure with the diastolic ratio disturbed. The appearance of several of these symptoms makes the delivery of the patient “imperative.” The duration of the disease prior to admission also affects the patient's chance of recovery and should be considered in deciding upon the course to be pursued. If surgical interference becomes necessary, the method to be used depends chiefly on the condition of the lower uterine segment; cesarean section is becoming more generally employed where the cervix is not completely dilated. Inhalation anesthesia is avoided; the authors use local anesthesia for cesarean section, and local perineal infiltration and nerve block for vaginal deliveries. Spinal anesthesia may be used for either method of delivery, and with experience in its use, may prove to be superior.

COMMENT

The middle-ground management of eclampsia is now in vogue. “All surgical” and “all medical” treatments have had their day. We now know that in all cases of pre-eclampsia and some cases (not all) of

eclampsia, where medical treatment does not ameliorate the symptoms, prompt surgical intervention is indicated. The type of surgical procedure is in the hands of the obstetrician. "After all is said and done" prevention is the best treatment of eclampsia—and this can actually be accomplished in the vast majority of cases.

H. B. M.

Precocious Motherhood

● AXEL OLSON (*Acta obstetricia et gynecologica Scandinavica*, 16:121-128, 1936) reports a study of 269 deliveries in girls thirteen to sixteen years of age at the Lying-In Hospital of Jutland during the past twenty-five years. During this same period there have been approximately 24,000 deliveries at the Hospital. Of these 269 young mothers, 3 were thirteen years of age, 8 were fourteen, 42 were fifteen, and the remaining 216 were sixteen. In these 269 cases, there were 3 cases of eclampsia and 2 of eclamptic toxemia, in girls of fifteen and sixteen; this is a greater proportion than usual in this hospital, but the figures are so small that it "may be simply a matter of fortuity." There was no case of contracted pelvis; premature labor and breech presentation were no more frequent than in older child-bearing women; artificial delivery was rare, 99 per cent. being delivered spontaneously. Uterine inertia was very rare, and the duration of labor, especially in the youngest patients, was shorter than in other primiparae. The duration of the puerperium was about the same as in older women, tending to be somewhat shorter, and the puerperal morbidity no greater. From the obstetric point of view, there is no reason for therapeutic abortion in minors, the author concludes. Studies made of the age and status of the father in these cases show, however, that the younger the girl, the more frequently the father of the child is an older man and sometimes a blood relation. Whether there may be ethical or sociological aspects of motherhood in young girls that render interruption of the pregnancy desirable, is not for the obstetrician to decide.

COMMENT

Olson has written a very interesting statistical paper but has given no new facts. Those of us who have lived amongst the southern races know full well the truth of all of the author's conclusions. Generally

speaking the younger the mother the easier the labor, and the quicker the recovery takes place.

H. B. M.

Relationship of Maternal Anemia to Fetal Polycythemia

● G. J. STREAN and R. GOTTLIEB (*Canadian Medical Association Journal*, 35:261-262, September, 1936) report a study of the blood in 75 consecutive, non-selected maternity patients in comparison with the blood from the umbilical vein just before delivery. In 40 of the 75 cases no anemia was found in the maternal blood, and the fetal blood showed only the usual degree of polycythemia. In 29 cases the mother showed a moderate to severe degree of anemia, and the fetal polycythemia was definitely intensified. In 6 cases, although there was no maternal anemia, there was an intensified polycythemia in the fetal blood. It is to be expected that any condition that will lead to an increase of fetal anoxemia will intensify the polycythemia. Maternal anemia is evidently one of these factors. The greater the polycythemia, the greater is the subsequent icterus resulting from the breaking down of erythrocytes. The authors suggest that since most of the anemias in pregnant women can be easily and successfully treated, many exaggerated polycythemias in the newborn with their sequelae can be prevented.

COMMENT

The authors have made an interesting observation, viz., that any condition that will lead to an increase of fetal anoxemia will intensify the polycythemia. Every practitioner, as well as specialist, doing obstetrics should keep this fact clearly in his mind. The principal cause is maternal anemia; the remedy is to prevent or relieve the anemia. The diagnosis is easy—a blood count; the remedy is simple—hematinic tonics and/or blood transfusions.

H. B. M.

The Significance of the Fetal Heart Tones in Ablatio Placentae

● G. C. RICHARDSON (*American Journal of Obstetrics and Gynecology*, 32:429-443, September, 1936) claims that not sufficient attention has been given to the changes in the fetal heart rate in the diagnosis of

—Continued on page 508

Cultural Medicine

OLD TRAILS

IV

TWO philosophic systems were largely responsible for nineteenth-century thought, that of Comte and that of Spencer, medicine being always particularly susceptible to the influence of prevailing philosophic views. Comte's positive philosophy especially influenced Claude Bernard and his colleagues of the very exact French school of physiologists, for it was an interesting attempt to prove that a careful study of the laws of the universe and human nature would reveal the fundamental laws of progress, and that these truths, properly systematized, would form a philosophy and a religion. The influence of the evolutionary philosophy upon medicine was likewise inevitable and profound.

Nineteenth-century medicine dates from the publication, in 1801, by that "Napoleon of Medicine," Marie Francois Xavier Bichat (1771-1802), a young Frenchman, of a work on general anatomy in which the seat of disease was assigned to the tissues which composed organs rather than to the organs themselves. It was a marvelous superstructure built upon the eighteenth century foundation laid by Morgagni with his gross anatomical changes in disease—an inevitable searching out of disease minutiae.

This awakener of the modern world did his work in the eighteenth century, but it was his "anatomie Generale" which gave the chief impetus of the nineteenth century and which was not published until the outset of the latter. He died in 1802, a star of the first magnitude in nineteenth century medicine. "He left an impress," says Carpenter, "on the science of life, the depth of which can scarcely be overrated; and this not so much by the facts which he collected and generalized, as by the method of inquiry which he developed, and by the systematic form which he gave to the study of general anatomy in relation both to physi-

ology and pathology." Buckle says that "If we compare the shortness of his life (thirty-one years) with the reach and depth of his views, then he must be pronounced the most profound thinker and consummate observer by whom the animal frame has yet been studied . . . We may except Aristotle, but between Aristotle and Bichat I find no middle man."

Bichat compared the structure of the body to a woven fabric, hence his choice of the old French term *tissu*. Characteristic patterns were perceived by him in every part of the body. His analysis gave us the twenty-one "tissues" familiar to histology (Greek *histos*: web).

The influence of Bichat upon our modern methods of differentiating and classifying normal and diseased tissues is obviously the most fundamental of facts. Our own principles hang upon his pioneer thought as philosophic ideas stem back to Plato. Every modern physician is in a peculiar sense the intellectual child of Bichat.

A brilliant line of physiologists, whom we can do no more than name, followed Bichat: Ludwig, Hemholtz, Mueller, Magendie, Claude Bernard, Beaumont, Bowman, Sharpey, Kronecker, du Boise Reymond, von Voit, Heidenhain, Kuehne, Weber, Friedrich, von Brucke, Flourens, Legallois, Poiseuille, Foster, Bowditch and Meltzer.

The great line of pathologists was equally glorious: Cruveilhier and Rokitsansky stand out strongly in the earlier part of the century. Of Virchow more anon.

Among the fundamental medical sciences anatomy profited enormously through the stimulus of Bichat, and the century blazed with the achievements of Sir Charles Bell, John Knox, Wistar, Horner, Goodman, Morton, Henle, Hyrtl, Remak, Purkinje and von Koelliker.

The foundation of modern clinical medicine was laid by Laënnec (1781-1826), through his introduction of the stethoscope, reinforced by Corvisart's re-introduction of Auenbrugger's art of percussion. Then came Bright, with his brilliant work upon the kidneys.

Measles, scarlet fever and smallpox were familiar entities, but it remained for Louis to separate typhoid fever from the tangle of continued fevers. In the differentiation between typhus and typhoid the Americans Gerhard, Stillé and Shattuck were pioneers. Then came the definition of relapsing and yellow fevers and dengue. By 1860 Graves, Stokes, Budd, Drake, Dickson and Flint had reduced the aspects of the fevers to clear clinical terms.

The central motive of nineteenth century medical science was experimental investigation. This key unlocked the doors leading to understanding of and relative control over the functions of life—digestion, assimilation, circulation, respiration, excretion, and cerebrospinal phenomena. The greatest progress, of course, dates from the growth of research laboratories, the first of which began to function about the middle of the century.

Specialism in the modern sense grew mightily in the nineteenth century. It was "the most important single factor in the remarkable expansion of our knowledge" (Osler). Specialism, while connoting a certain narrowness, insured greater accuracy in the application of knowledge. Despite obvious evils, it led to great progress and signal triumphs.

Specialism was especially productive of good in the domain of insanity, great reforms in the care of the alienated going along with the expansion of knowledge regarding causes and methods of treatment. The chief drawback was the exploitation of the insane by the forces of politics. It was the Englishman Tuke (whom we also think of as a late eighteenth century innovator), the American Rush, the Frenchmen Pinel and Esquirol, and the Germans Hasse and Jacobie who inaugurated reforms.

One of the first effects of the return in considerable numbers of young Americans educated medically in London, Edinburgh and Paris—chiefly the last—during the early part of the century, was a great growth in private medical schools. Rush, Physick, Hosack, Mitchell, Jackson, Warren and Drake leavened the mass. These independent proprietary schools served a great

purpose but in many cases their standards were none too high; even when connected with universities they were not essentially different in organization and policies from the unattached schools. But reform began in 1870 at Harvard, and university medical schools, general hospitals and laboratories of a higher order were rapidly organized through capitalistic interest, which meant much for the science and art of medicine and for an industrial civilization. At the end of the century there were one hundred and fifty-five medical schools in the United States, of which a considerable number stood in the first rank.

Preventive medicine, the development of which characterized the nineteenth century so strongly, was enabled through the birth of bacteriology to come into its own. The roots of this department of medicine were in the public and personal hygiene of the Egyptians, Greeks and Romans, while Jenner's introduction of vaccination gave it a huge impetus. Then there were the sanitary reforms inaugurated by Howard through his observation that overcrowding, particularly in jails, was a definite factor in the spread of typhus fever. Another starting point was the success in preventing scurvy of Captain Cook and Sir Gilbert Blaine.

It was the fascination exerted by the theory of spontaneous generation, and the search for the supposed factors, that gave nineteenth century bacteriology its start.

In 1871 Carl Weigert succeeded in staining bacteria and in 1874 introduced aniline dye stains. There continued, however, to be great skepticism on the subject of the alleged relation of bacteria to infectious disease until Pasteur, in 1877, by his anthrax researches, proved the truth of the germ theory. This broke the opposition to a considerable degree and started a long line of achievements, the most outstanding of which, all satisfying the exacting postulates of Koch, may be listed by years—down to the end of the nineteenth century—as follows:

- 1873. Relapsing fever: spirillum of Obermeier.
- 1874. Leprosy: bacillus discovered by Hansen.
- 1875. Dysentery: the L \ddot{o} sch amebæ (see 1897).
- 1876. Anthrax: bacillus demonstrated in man by Koch.
- 1877. Malignant edema: Pasteur and Joubert.

1879. Puerperal and surgical infections: partially elucidated by Koch and Pasteur.
Gonorrhea: the Neisser coccus.
1880. Trypanosomiasis: the trypanosome discovered by Evans.
Furunculosis: staphylococcus (Pasteur)
Typhoid: the Eberth bacillus.
Septicemia: Streptococcus isolated by Pasteur.
Pneumonia: coccus of Sternberg and Pasteur.
1881. Puerperal and surgical infections: further elucidated by Gaffky.
1882. Glanders: Löffler, Schütz, Bouchard, Capitan and Charin.
Tuberculosis: Koch.
1883. Erysipelas: Fehleisen.
Diphtheria: Klebs.
Asiatic cholera: Koch's comma vibrio.
Pneumonia: Friedländer's pneumobacillus.
1884. Pneumonia: Fraenkel studies diplococcus.
Cholera nostras: the Finkler and Prior bacillus
Tetanus: Nicolaier.
1886. *Bacillus coli* infections: Escherich.
Pneumonia: Fraenkel completes study of coccus.
1887. Malta Fever. Sir David Bruce.
Cerebrospinal meningitis: Weichselbaum's meningococcus.
1889. Texas fever: Theobald Smith.
1892. Influenza: Pfeiffer, Cannon and Kitasato.
Puerperal and surgical infections: still further elucidated by Welch.
1894. Bubonic plague: Kitasato and Yersin.
1896. Botulism: Van Emengem's *Bacillus botulinus*.
1897. Dysentery: the bacillary (epidemic) form elucidated by Shiga.
1898. Foot and mouth disease of cattle: Löffler isolated the virus from vesicles.

What other science ever has, in so short a time—twenty-five years—accomplished so much?

Serum therapy was an inevitable outgrowth of bacteriology since it was natural to attempt emulation and artificial intensi-

fication of what was known to be the body's defensive mechanism through the elaboration of antitoxins. Such knowledge of immunity had been acquired by Pasteur, Raynaud, Salmon and Smith in the course of cowpox and hog cholera researches covering the years 1877-1886. Then came Behring (1892) with his diphtheria antitoxin, leading to a fifty per cent reduction of the mortality.

Other nineteenth century triumphs of serum therapy were tetanus antitoxin and Calmette's antitoxin serum against snake venom.

The principles of preventive medicine, in so far as they were developed during the nineteenth century on the basis of infectious disease study, led directly, when practically applied, to many glorious triumphs.

Thus vaccination, wherever it was efficiently and systematically applied, as in the German army, wiped out smallpox completely. The disease was kept alive in various communities by the unvaccinated groups.

Typhus, even more prevalent than typhoid in the early part of the nineteenth century, was practically wiped out in the jails, ships, hospitals and camps. Through drainage, improved water supply and the relief of overcrowding the mortality was reduced from 1228 per million of living in 1838 (England) to 3 per million living.

Typhoid was not entirely wiped out by preventive medicine because such a victory would have involved a perfect water and ice supply, absolutely uncontaminated milk, thoroughly efficient rural sanitation, the complete control of carriers, the most scrupulous care of those ill with the disease, and prophylactic vaccination of the well, which last was not introduced until 1888 (Widal and Chantemesse), not applied until 1895-8 (Haffkine), and then only to a few persons going to tropical countries, and not employed upon a large scale until 1898 (Indian Army and South African troops—Wright). It remained for Major Frederick F. Russell of the United States Army (1912) to make the most conclusive demonstration of all upon 20,000 men with "absolute success"—which takes us into the twentieth century.

Cholera was gotten under control in civilized areas by 1873, after which time no epidemic marred the century. Such control was gained by rigid quarantine at ports of entry and by control of water supply.

—To be continued

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MEDICAL

Medical Book News

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Edited by TASKER HOWARD, M.D.



Daniel Webster Cathell

CLASSICAL QUOTATIONS

• When you visit a patient, neither tarry long enough to become a bore and compel people to wish you would go, nor make your visit so brief or abrupt as to leave the patient feeling that you have not given his case the necessary attention.

Daniel Webster Cathell, *The Physician Himself*. Baltimore, 1882, p. 36.

First Volume of an Important Surgery

POST-GRADUATE SURGERY. Edited by Rodney Maingot, F.R.C.S. Volume I. New York, D. Appleton-Century Company, Inc. [c. 1936]. 1742 pages, illustrated. 4to. Cloth, \$15.00.

This work appears as the first of three volumes, well bound, clearly printed on excellent paper, and easily read. The first volume, which is the one under review, has 1742 pages with 846 illustrations.

An American foreword by Dr. Eugene H. Pool, a preface by Dr. Rodney Maingot, the editor, and an introduction by Lord Moynihan, gloriously open this volume. A specific detailed review would be too long to be of value. To debate the viewpoints and practices, which do not entirely agree with ours, would prove nothing. This work is intended for the practicing surgeon, for senior resident surgeons, for Fellowship candidates, for medical officers in the fighting services, and for general practitioners, who may be called upon for emergent surgical procedures. The contents of volume one consist of five parts, namely, 1—Anesthesia, 2—Abdomen, 3—Rectum and Anus, 4—X-Ray diagnosis, 5—Radium treatment. Contributing to these five parts are twenty surgeons, each one a specialist in his particular field.

While it is the modern trend to encourage the loose-leaf system of surgical texts, and while these systems have a very definite and

valuable place, the reviewer feels that there is an equally definite and valuable place on his book shelf for a work such as this. It is a complete, concise, comprehensive surgical bible. It is a record of the latest thoughts, practices, and methods, in general surgery. Symptomatology diagnosis, operative technique, pathological anatomy, and post-operative care are included. The illustrations are profuse, pertinent, and easily interpreted. In brief, this "Post-Graduate Surgery" is welcomed by us. It is a source of valuable information. It is most highly recommended to any physician and to all surgeons.

MERRILL N. FOOTE.

Parax

PASSIVE VASCULAR EXERCISES AND THE CONSERVATIVE MANAGEMENT OF OBLITERATIVE ARTERIAL DISEASES OF THE EXTREMITIES. By Louis C. Herrmann, M.D. Philadelphia, J. B. Lippincott Company [c. 1936]. 288 pages, illustrated. 8vo. Cloth, \$4.00.

This monograph is a truly comprehensive presentation of the subject of Peripheral Vascular Diseases gathered from clinical reports from various clinics throughout the medical world in a comparatively new branch of medicine. It rightly deserves to be considered a text book on the subject, surpassing in its scope and balance Buerger's Monograph of 1924, with which any worker in this field is well acquainted. In addition to giving fair place in the evaluation of merit to other investigators the author

offers without any rash claims his results in the treatment of vascular disorders by the use of the Pavaex (Passive Vascular Exercises) unit.

Dr. Hermann takes up the subject in logical order, easily comprehensible to the general practitioner and in a way that the reader is aware of the exact knowledge and painstaking effort of the author in writing this monograph and correlating the multitudinous ideas in this field of chaos.

It would be useless to attempt to summarize this monograph completely as a vast field of many views is covered without attempts in any way to discredit, but, on the other hand, to correlate their value as claimed by other investigators.

The main purpose of the book after "giving the other fellow his inning" is to let the general practitioner and surgeon know that he need not despair when a patient with actual or threatened gangrene of an extremity comes to him, pleading for his limb to be saved. Nothing will be lost and perhaps a limb and life will be saved by changing from the placid role of waiting, to an active role of building up a collateral circulation which will enable the tissues to balance their own metabolic needs, or, when a low amputation must be done, a less mutilated limb and a more hopeful patient is again restored to useful labor.

The definite indications of this method of therapy in organic vascular diseases are clearly presented. The gaps are left open for other equally beneficial measures to be used in conjunction with Pavaex to the finality of a real scientific achievement.

Careful selections of cases and knowledge of the types of cases best suited for Pavaex are strongly advised by the author in avoiding disappointments in the end results. As the development of collaterals is mainly through the arteriolar bed, type cases such as advanced Buerger's disease and arteriosclerosis with extensive capillary stasis are not suitable for this method. Also acute infectious processes associated with vascular diseases, should be denied this form of therapy, such as lymphangitis, cellulitis, and thrombo-phlebitis.

In conclusion, we believe this monograph well deserves the attention of more than a glance and should be a standard text on every physician's and surgeon's shelf.

HUGH L. MURPHY.

A Textbook of Nursing

THE SCIENCE AND ART OF NURSING. By Ella L. Rothweiler, R.N. Edited by Jean Martin

White, R.N. Philadelphia, F. A. Davis Company [c. 1935]. 1196 pages, illustrated. 8vo. Cloth, \$3.00.

A physician's main objective in the practice of medicine is the welfare of the patient. In this ideal objective, proper education and training of nurses has an important position. The nurse, to help the patient respond to treatment, must have the same objective—everything in her life and work to promote the patient's welfare.

It is a physician's duty to take an interest in nursing education—to know the trends of teaching in the present day training schools—to cooperate with them to obtain the ideal of "patient welfare." Your acquaintance with "Science and the Art of Nursing" is recommended. A textbook written primarily for the student and secondarily for the teacher, it includes something from every course in the nursing curriculum. The subject matter is arranged to permit its adaptation to any school of nursing. A complete vocabulary is given for each chapter. Medical terminology is included as necessary. The illustrations are well chosen. Of value also are the suggestions for directed study.

The author has made an effort in the right direction. The student nurse has been in the past few years overwhelmed with almost medical school courses, with a mass of details and theories for which she is not equipped. To her this textbook is a blessing. It is practical. It has correlation of subjects. While simple in detail, it compares well with college texts. The theme of "patient welfare" predominates.

PAUL C. ESCHWEILER.

Religion in Therapeutics

HEALING: PAGAN AND CHRISTIAN. By George G. Dawson, M.A. New York, The Macmillan Company [c. 1935]. 322 pages. 8vo. Cloth, \$3.25.

Mr. Dawson in this book endeavors to fit the kinds of healing typified in his title into the history of therapeutics. He paints in a historical background covering the growth of medicine, surgery, and psychotherapy and admits the vital importance of each branch in its place. There is a suggestive scrap of a passage on bodily functions which may be influenced by emotion, including glandular activity, circulatory and respiratory activity, and perhaps antibody-formation. He believes that these functions may be favorably affected in sickness by the mumbo jumbo of the medicine man or by the rites of the church, but that the latter have the additional advantage of for-

tifying the spiritual life of the patient. The student of theology will perhaps find the book a useful theoretical study though the implications are not altogether clear. The lay reader wishes sometimes that the children had kept even more quiet. The book is dedicated to them in "gratitude for allowing their father to study." It seems to the reviewer that a far more valuable book for a priest of any religion is to be found in Cabot and Dicky's recently published volume, *The Art of Ministering to the Sick*.

TASKER HOWARD.

Second Edition of Bram on Graves' Disease
EXOPHTHALMIC GOITER AND ITS MEDICAL TREATMENT. By Israel Bram, M.D. Second edition. St. Louis, The C. V. Mosby Company [c. 1936]. 456 pages, illustrated. 8vo. Cloth, \$6.00.

The author has had extensive experience with this disease in over 5000 cases and is a thorough student of all its phases. He prefers the terms Graves' disease or exophthalmic goiter, to contrast the condition with toxic adenoma. Hyperthyroidism is considered an unfortunate designation as it includes the symptoms present in toxic adenoma, and he dislikes the terms toxic goiter, thyrotoxicosis, and hyperplastic goiter because they stress the gland itself in etiology.

An excellent detailed presentation of the etiology, symptomatology and diagnostic features will be found in the book. All diagnostic tests are considered and of these, the most useful in the opinion of the author, are the basal metabolic and the quinine tests. The latter is based upon the idea that generally patients with Graves' disease tolerate a larger amount of quinine than when the disease is not present. Ten grains three times a day are given and "if after four days there are no evidences of cinchonism, the individual's reaction may be considered positive for hyperthyroidism. When twenty or thirty grains have been taken by persons in whom the thyroid function is normal or deficient, symptoms of cinchonism develop." The frequency of error noted, he finds to be less than 5%.

As is well known, the author's plan of treatment is medical and, in general, he does not employ surgical or X-ray treatment in true Graves' disease. Surgical indications he considers to be present principally in patients who show no improvement after five or six months of good medical care, (about 1% of total of those with severe true Graves' disease), also in intrathoracic location with pressure symptoms

and sometimes in the presence of a complicating diabetes mellitus, unyielding to the usual treatment.

The principal therapeutic methods employed are rest, diet, removal of foci of infection, barbiturates, quinine, sometimes iodine with great care, and especially psychotherapy to which he gives much attention and his consideration of this method is very well presented. The emphasis upon the personality factor and treatment of the patient "as a whole" cannot be objected to, although many think more favorably of surgery or radiation than the author. However one feels about this, the book will be found a scientific treatise and will furnish a wealth of information.

W. E. MCCOLLOM.

New York Academy of Medicine Graduate Fortnight for 1935

DISEASES OF THE RESPIRATORY TRACT. Eighth Annual Graduate Fortnight of the New York Academy of Medicine. Philadelphia, W. B. Saunders Company [c. 1936]. 418 pages, illustrated. 8vo. Cloth, \$5.50.

The New York Academy of Medicine has done an excellent thing in having these clinical lectures presented at last year's Graduate Fortnight bound together and published in so readable form as is this collection. Each chapter is devoted to a distinct, separate subject and each is presented by an outstanding expert in his field. Thus, in looking over the table of contents, we find such chapters as the "Common Cold" by A. R. Dochez, "Bronchoscopy in Relation to Diseases of the Respiratory Tract" by Chevalier L. Jackson, "Bronchiectasis" by J. Burns Amberson, Jr., "Pneumonia in Childhood" by Charles Hendee Smith, "Pneumoconiosis with Particular Reference to Silicosis and Tuberculosis" by LeRoy U. Gardner, "Abscess and Gangrene of the Lungs" by H. Wessler, "Carcinoma of the Lung" by Lloyd F. Craver,—to pick a few at random from the list.

The book is well illustrated, splendidly edited and of great practical value to the up-to-the-minute physician.

FOSTER MURRAY.

John Meagher's Book Revised by Jelliffe
A STUDY OF MASTURBATION AND THE PSYCHOSEXUAL LIFE. By John F. W. Meagher, M.D. Third edition. Re-edited and Revised by Smith Ely Jelliffe, M.D. Baltimore, William Wood and Company [c. 1936]. 149 pages. 12mo. Cloth, \$2.00.

The first edition of this book appeared in 1924 and the second in 1929. It was written by a practical neuropsychiatrist

who found a great need for a small volume on a controversial subject. The third edition was revised by an eminent neuropsychiatrist who kept the book within the scope as outlined by the late Dr. Meagher. He added footnotes as suggestive readings for those who would wish to study the subject more thoroughly. Dr. Jelliffe did not add the latest up to date details of the psychoanalytic theories regarding masturbation, but treated the subject in a broad and scientific manner with considerable psychoanalytic implications. There are eleven chapters in the book, each devoted to a different phase of the subject. It is a practical work, and should find favor with those interested in the subject.

IRVING J. SANDS.

Pilology

THE HAIR AND SCALP. A Clinical Study with a Chapter on Hirsuties. By Agnes Savill, M.D. Baltimore, William Wood & Company [c. 1935]. 288 pages, illustrated. 8vo. Cloth, \$5.00.

This work contains in a comparatively small space a great deal of valuable information which is not found in the ordinary text books on dermatology. It is divided into 20 chapters. It is profusely illustrated. The illustrations have been well chosen.

The following chapters are of special interest:

Chapter 1. Structure and Physiology of the hair. In addition to the histology of the hair, the rate of growth, the number of hairs and their life are given. Of special interest to the reviewer is the last paragraph of this chapter on the arsenic content of the hair and the method of determining whether the arsenic was acquired from external contact or from the blood stream.

Chapter 4 by W. T. Astbury on the molecular structure and elastic properties of hair gives the arrangement of the polypeptide chains, the basis of keratin, to explain the elasticity of hair. The effect of heat in permanent waving and the use of "sets" by hair dressers are explained. A temperature of more than 130°C. is stated to be dangerous. Hair dyes are discussed in chapter 19. The chemical composition of those most commonly used is given and their dangers are described. The other chapters are devoted to diseases of the scalp and to scalp involvement in general conditions. Abnormalities in the structure of the hair are thoroughly discussed.

A useful formulary is appended.

The work is both useful and well written.

BINFORD THRONE.

Brief Biographies From the German

TRAIL-BLAZERS OF SCIENCE. Life Stories of Some Half-Forgotten Pioneers of Modern Research. By Martin Gumpert. Translated from the German by Edwin L. Shuman. New York, Funk & Wagnalls Company [c. 1936]. 306 pages. 8vo. Cloth, \$2.50.

This book, originally published in Berlin under the title "Das Leben fuer die Idee," is a brilliant presentation of the life-stories of ten pioneers in scientific research.

The underlying theme of these biographical sketches is the inevitable opposition that greeted the new ideas and contributions of these great benefactors of the human race. Not only did they sacrifice their peace and happiness, but also, they very often forfeited their lives. The roster of martyrs who suffered the agonies of senseless persecution that science and civilization might progress is a long one, and many physicians have contributed their names to this list. The fact must be emphasized that this opposition did not come from the ignorant and less fortunate people, but from persons standing high in public and spiritual circles.

These biographies cover the period from the Renaissance to modern times, from Jerome Cardan of the early sixteenth century to Harvey Cushing of the twentieth century.

Dr. Gumpert has written a highly interesting book, the instructive and entertaining qualities of which have been made available to the American reader by the excellent translation of E. L. Shuman.

WILLIAM RACHLIN.

A New Edition of DuBois on Metabolism

BASAL METABOLISM IN HEALTH AND DISEASE. By Eugene F. DuBois, M.D. Third edition. Philadelphia, Lea & Febiger [c. 1936]. 494 pages, illustrated. 8vo. Cloth, \$5.00.

This is the third edition of a book which has become a standard work for all those interested in the study of metabolism. Scientific accuracy combined with simplicity of style make the book readable even for one less acquainted with this difficult chapter of physiology. The references to the American and foreign literature are ample and well chosen.

M. A. GOLDZIEHER.

A Psychoanalyst's Viewpoint

FRIGIDITY IN WOMEN. Its Characteristics and Treatment. By Dr. Eduard Hitschmann and Dr. Edmund Bergler. Nervous and Mental Disease Monograph Series No. 60. New York, Nervous and Mental Disease Publishing Co. [c. 1936]. 76 pages. 8vo. Paper, \$2.00.

This translation of a monograph by two Viennese physicians is concerned with the psychical nature of frigidity as a pathological inhibition; the treatment and cure will be found in a Freudian psychoanalysis. Remnants of the castration and Oedipus complexes are usually responsible. The gynecologist's conception of these inhibitions is all wrong and his treatment, leading to mutual disappointment, can only be harmful. Gynecologists will do well to read this book, for it will widen their horizon.

CHARLES A. GORDON.

On the Value of Eating Frequently

DIET AND PHYSICAL EFFICIENCY. The Influence of Frequency of Meals upon Physical Efficiency and Industrial Productivity. By Howard W. Haggard, M.D., and Leon A. Greenberg, Ph.D. New Haven, Yale University Press [c. 1935]. 180 pages, illustrated. 8vo. Cloth, \$3.00.

This is a careful study of the relationship of food, and the ability of muscles to work for the individual in a factory. There is first a discussion of the various foods and their means of utilization, the total calories required, how efficiency varies according to whether certain foods are being metabolized, and then many charts and tables of the varying respiratory quotients after the ingestion of different foods and mixtures.

Through experiments and studies and by direct application to persons at work, the authors have come to some very definite conclusions. They believe that instead of eating three meals a day, that most perfect muscular efficiency is obtained by taking a small meal (a glass of milk, and a piece of angel cake) at the third hour of the morning and also at the third hour of the afternoon. The usual three meals are to be eaten, but the food taken in the middle of the morning and afternoon is to be subtracted from them. On such a regime the output of factory workers was increased 10 per cent. Muscular efficiency is lower before breakfast, rising very quickly after a meal, and falling again as time passes if no food is taken. The authors present ample charts and studies to establish their points, and there is an excellent bibliography appended.

LOUIS C. JOHNSON.

Concerning the Chemistry of Hormones

THE CHEMISTRY OF NATURAL PRODUCTS RELATED TO PHENANTHRENE. By L. F. Fieser. New York, Reinhold Publishing Corporation [c. 1936]. 358 pages, illustrated. 8vo. Cloth, \$6.50.

This volume is number 70 in the series of scientific and technologic monographs of the American Chemical Society. Professor Fieser brings up to date the knowledge ac-

cumulated about the most interesting series of phenanthrene compounds and sterols. The advances made in this field since 1929 are astounding. They point to a remarkable unity in the varied chemical substances belonging to the resin acids, carcinogenic hydrocarbons, sterols and bile acids, sex hormones, cardiac poisons and saponins. To Rosenheim, for his completion of the structural formula of cholesterol, must be given due credit since, following this remarkable work, there was a marked acceleration in the unification of the various interrelated compounds.

This work is of especial interest to the medical man for the elucidation of the various chemical problems related to gynecology and internal medicine. Chapters on sex hormones, including the estrogenic, male and corpus luteum hormones, are discussed in considerable detail. A short, salient feature is the discussion of their biogenetic relationships.

The volume deserves a place on the shelf in the hospital laboratory, as well as in the libraries of those who endeavor to correlate the chemical advances of recent years in their respective fields of gynecology and internal medicine.

ABRAHAM R. KANTROWITZ.

On Breathing Exercises

HEART DISEASE AND TUBERCULOSIS. Efforts Including Methods of Diaphragmatic and Costal Respiration to Lessen Their Prevalence. By S. Adolphus Knopf, M.D. Livingston, Columbia County, New York, The Livingston Press [c. 1936]. 108 pages, illustrated. 8vo. Cloth, \$1.25.

Dr. Knopf has for many years advocated peculiar methods of respiration involving diaphragmatic control and developing costal respiration to its fullest capacity. His writings on this subject date back over some twenty-five years, and obviously he has been much impressed with the value of these methods. Unquestionably the matter of control of respiration plays a certain definite part in the physiological care of pulmonary tuberculosis. Just how much stress should be laid on this particular phase of treatment may be open to debate. Dr. Knopf believes in its very great value and writes entertainingly to that effect. He believes also that his method of controlling respiration plays a not unimportant role in the treatment of certain cardiac disorders and cites a number of confirmatory reports from other investigators. Altogether this is an intriguing little booklet which may be fully perused in about one-half hour.

FOSTER MURRAY.

Actinotherapy

THERAPEUTIC USES OF INFRARED RAYS with a chapter on The Treatment of Sinusitis by Radiotherapy. By W. Annandale Troup, M.D. Third edition. London, The Actinic Press, Ltd. [c. 1936]. 149 pages, illustrated. 8vo. Cloth, 10/6.

In this small volume the author has condensed a fund of valuable information. Infra-red technic has been used for many years with but slight thought of the efficiency of its generation and with very little attention to indications and application. Here are detailed the latest developments in infra-red generators with mention also of certain ultra-violet equipment. Particular attention is paid to those pathological conditions which are amenable to infra-red therapy and which are surprisingly numerous. Technic is detailed for several of the conditions and many typical case records are presented to show the benefits of the treatment. In conclusion a chapter on infra-red photography is added.

This is intensely interesting and as the author points out has many possibilities as an aid to diagnosis and research. The book as a whole is well presented and will well repay the brief time required for its perusal.

JEROME WEISS.

Recreation in Therapeutics

PRINCIPLES AND PRACTICE OF RECREATIONAL THERAPY FOR THE MENTALLY ILL. By John E. Davis, B.A. New York, A. S. Barnes & Company, Inc. [c. 1936]. 206 pages, illustrated. 8vo. Cloth, \$3.00.

For many years those interested in mental patients have been thinking more and more of treatment. It is within the memory of some of us that about all the treatment mental patients received was for some intercurrent physical disease. Little attention was given to the mental reactions and much less to the reasons for them. As interpretative psychiatry developed there was a better understanding of the reasons; psychotherapy was amplified and treatment was directed more to the roots of the abnormality. Any form of treatment that would draw a patient out of his wish fulfilling dream state was considered helpful. Recreational activities have seemed to do just that in many cases. It is defined in this book as any form of expressive activity, motor, sensory or mental activated by the spirit of play. The authors take up briefly the different reaction types and suggest ways of inducting patients into the forms of recreation and progressing them from the simpler to the more complicated, with the object of increasing self respect and making

the events of reality more attractive, thus re-educating and resocializing them.

There is an immense amount of work and close observation represented in this book and the findings have been correlated in such a way as to be, it is believed, very helpful to those trying to deal in a radical way with mental patients.

A. E. SOPER.

Dietetics for the Layman

FOOD, FITNESS AND FIGURE. By Jacob Buckstein, M.D. Introduction by Harlow Brooks, M.D. New York, Emerson Books, Inc. [c. 1936]. 252 pages. 8vo. Cloth, \$2.00.

There are some unusual features about this popular little book for the layman which are not found in a large number of books on the subject. The author has succeeded in uncovering much of the historical facts known about nutrition. That, plus a brilliant analysis of racial food habits has added material which makes extremely interesting reading. The presentation of many accidental scientific findings, among them the discovery of Vitamin B by Eijkman, and the discovery of Roquefort cheese, adds a fascinating touch to the book. The whole thing is accurate and well-written in simple language. This book can be recommended as one of the best on the subject.

WILLIAM S. COLLENS.

A Question by De Kruif

WHY KEEP THEM ALIVE? By Paul De Kruif. New York, Harcourt, Brace and Company [c. 1936]. 293 pages. 8vo. Cloth, \$3.00.

A startling query and a startling and important book. De Kruif refers to the children of America. His book is a challenge to our contentment with modern civilization and our economic system. It constitutes a grave indictment of the economic order of this day; that allows the needless sacrifice of children's lives.

The book is filled with so many facts, so logically and clearly described, that their very significance cannot but be understood, and the realization is forced upon us that poverty is the great social cause of disease, vice and feeble-mindedness. The author's style is purposely clothed in no elegant language, but he does have a way of keeping his subject vitally alive to his readers, and one is inevitably impressed with the failure of an economic order in which the results of scientific discoveries for prevention of disease and death are only available to those who have the power to buy them. Yet, our scientists go on work-

ing "in spite of an economic order that makes a mock of their life-giving discoveries." The medical profession, almost alone, comes to the rescue of those afflicted with deadly poverty; they alone will work for nothing. Several of the heroic stories of the work of our present day discoverers are told; Davidson, Coburn, Steenboch, Hess and others. Some of the significant movements in public health prevention of disease by the profession, health leaders and their associates, are remarkably well described.

The book is not intended as a philosophical discussion of the present economic system, but it very strongly brings to light its short comings. De Kruif has voiced some radical ideas for the cure of our economic distress; only communists would agree with these.

It is to be remembered that the most significant reform is that which concerns the inner life, as Yeats has said. Until there is a better conception of the brotherhood of man, all revolutionary changes of material type are ultimately futile.

JOSEPH C. REGAN.

A New Obstetrics

A MANUAL OF PRACTICAL OBSTETRICS. By O'Donel Browne, M.D. Baltimore, William Wood and Company [c. 1936]. 363 pages, illustrated. 8vo. Cloth, \$6.50.

A concise, well written and well printed manual "for the student and general practitioner . . . devoted to the practical aspect of midwifery." The illustrations are good and as far as possible show all sagittal sections from the same side, which is a distinct advantage. Included is a chapter on radiology in obstetrics, which shows the value of X-ray in normal and abnormal cases.

A. T. ANTONY.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

HOW WE CAME BY OUR BODIES. By Charles B. Davenport. New York, Henry Holt and Company [c. 1936]. 401 pages, illustrated. 8vo. Cloth, \$3.75.

MADAME TOUSSAINT'S WEDDING DAY. By Thad S. Martin. Boston, Little, Brown and Company [c. 1936]. 281 pages. 12mo. Cloth, \$2.00.

MEDICAL TIMES • NOVEMBER, 1936

MEDICINE AND MANKIND. Lectures to the Laity delivered at the New York Academy of Medicine. Edited by Iago Galdston, M.D. New York, D. Appleton-Century Company [c. 1936]. 216 pages, illustrated. 12mo. Cloth, \$2.00.

CHEMICAL PROCEDURES FOR CLINICAL LABORATORIES. By Marjorie R. Mattice, A.B. Philadelphia, Lea & Febiger [c. 1936]. 520 pages, illustrated. 8vo. Cloth, \$6.50.

A TEXT-BOOK OF NEURO-ANATOMY. By Albert Kuntz, M.D. Second edition, thoroughly revised. Philadelphia, Lea & Febiger [c. 1936]. 519 pages, illustrated. 8vo. Cloth, \$6.00.

A TEXT-BOOK OF PATHOLOGY. By W. G. MacCallum. Sixth edition, entirely reset. Philadelphia, W. B. Saunders Company [c. 1936]. 1277 pages, illustrated. 8vo. Cloth, \$10.00.

TISSUE IMMUNITY. By Reuben L. Kahn, M.S. Springfield, Charles C. Thomas [c. 1936]. 707 pages, illustrated. 8vo. Cloth, \$7.50.

A DIABETIC MANUAL FOR PRACTITIONERS AND PATIENTS. By Edward L. Bortz, M.D. Philadelphia, F. A. Davis Co. [c. 1936]. 222 pages, illustrated. 8vo. Cloth, \$2.00.

PROCTOLOGY. A Treatise on the Malformations, Injuries and Diseases of the Rectum, Anus and Pelvic Colon. By Frank C. Yeomans, M.D. Second edition. New York, D. Appleton-Century Company [c. 1936]. 661 pages, illustrated. 4to. Cloth, \$12.00.

ARTHRITIS AND RHEUMATIC DISEASE. By Maurice F. Lautman, M.D. New York, McGraw-Hill Book Company, Inc. [c. 1936]. 177 pages, illustrated. 8vo. Cloth, \$2.00.

THE AMERICAN MEDICAL PROFESSION 1783 TO 1850. By Henry B. Shafer, Ph.D. New York, Columbia University Press [c. 1936]. 271 pages. 8vo. Cloth, \$3.25.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Edited by Louis Hamman, M.D. Volume III, Forty-Sixth Series, 1936. Philadelphia, J. B. Lippincott Company [c. 1936]. 339 pages, illustrated. 8vo. Cloth, \$3.00.

THREE LECTURES ON ENDOCRINOLOGY IN EVERYDAY PRACTICE. By Henry R. Harrower, M.D. Glendale, The Harrower Laboratory, Inc. [c. 1935]. 62 pages. 8vo. Cloth, \$1.00.

TRUANTS. The Story of Some Who Deserted Medicine Yet Triumphed. Based on the Linacre Lecture delivered at Cambridge May 6, 1936. By Lord Moynihan, K.C.M.G. New York, Macmillan Company [c. 1936]. 109 pages. 12mo. Cloth, \$1.40.

A HANDBOOK OF UROLOGY FOR STUDENTS AND PRACTITIONERS. By Vernon Pennell, F.R.C.S. New York, Macmillan Company [c. 1936]. 224 pages, illustrated. 12mo. Cloth, \$2.25.

DISEASES OF THE AIR AND FOOD PASSAGES OF FOREIGN-BODY ORIGIN. By Chevalier Jackson, M.D. & Chevalier, L. Jackson, M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 636 pages, illustrated. 4to. Cloth, \$12.50.

A MANUAL OF PHARMACOLOGY AND ITS APPLICATION TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D. Fifth edition, entirely reset. Philadelphia, W. B. Saunders Company, [c. 1936]. 1190 pages, illustrated. 8vo. Cloth, \$7.50.

A TEXTBOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, M.D. Thirteenth edition thoroughly revised. Philadelphia, W. B. Saunders Company, [c. 1936]. 1150 pages, illustrated. 8vo. Cloth, \$7.00.

THE SURGICAL CLINICS OF NORTH AMERICA. June, 1936. Volume 16, number 3. (New York Number). Issued serially, one number every other month by the W. B. Saunders Company, Philadelphia & London. Per Clinic Year (6 nos.) Paper, \$12.00; Cloth, \$16.00.

VASCULAR DISORDERS OF THE LIMBS. Described for Practitioners and Students. By Sir Thomas Lewis, M.D. New York, The Macmillan Company, [c. 1936]. 111 pages. 8vo. Cloth, \$2.00.

AN AMERICAN DOCTOR'S ODYSSEY. Adventures in Forty-five Countries. By Victor Heiser, M.D. New York, W. W. Norton & Company, Inc., [c. 1936]. 544 pages. 8vo. Cloth, \$3.50.

DISEASES OF THE NAILS. By V. Pardo-Castello, M.D. Springfield, Charles C. Thomas, [c. 1936]. 177 pages, illustrated. 8vo. Cloth, \$3.50.

Contemporary Progress

—Concluded from page 497

Obstetrics

The Significance of Fetal Heart Tones—Continued

ablatio placentae and the determination of the degree of separation. Placental separation disturbs the oxygen-carbon dioxide balance of the fetus, and this results in compensatory acceleration of the fetal heart rate. This acceleration of the fetal heart rate, the author has found, bears a definite relationship to the area of placental detachment. As the separation of the placentae advances, oxygen becomes so deficient and carbon dioxide so overwhelming that asphyxia results, with slowing of the fetal heart rate and ultimate fetal death. In his study of cases of ablatio placentae, he has determined the fetal heart rate at frequent intervals, and at delivery determined the area of placental detachment. On the basis of these studies he concludes that with a separation of one-fourth to one-third the area of placental attachment, the normal fetal heart rate of 136 to 140 will increase to 160 to 170; at one-half separation to 180 to 190. Beyond the point of one-half separation the "compensation phase" gives place to the phase of asphyxia, the fetal heart rate decreases and fetal death will occur "before, at or immediately after complete detachment." If the process of separation is prolonged fetal death occurs quietly, but if it is rapid there is "violent fetal activity." If the fetal heart rate is observed at definite and frequent intervals (fifteen to thirty minute intervals), an earlier diagnosis of ablatio placentae is possible before other signs are

Cancer

—Concluded from page 479

the spinal cord has been advocated for relief of the pain.

The problem of primary carcinoma of the lung is the problem of cancer elsewhere in the body, early diagnosis. The roentgen-ray examination reveals an advanced condition. Although some cures have been recorded of removal of small carcinomatous growths in the bronchus by means of the bronchoscope, it is difficult to get a patient with few symptoms to submit to the necessary examination. If surgery can remove these growths before they become sources of bloodstream dissemination, or before they invade the first line of lymphatic defense, we will look to surgery to cure these patients. It seems that some method of earlier diagnosis of carcinoma in the body must be devised; either by the discovery of some chemical substance in the blood, which will be pathognomonic of carcinoma, or by some skin reaction.

present; it will be found that ablatio placentae is not usually as abrupt a process as has been supposed, but rather "insidious in its course," and that there is time for "more adequate and satisfactory treatment than is usually given." The author does not discuss methods of treatment for this complication, but emphasizes the value of earlier diagnosis in facilitating treatment and improving the prognosis.

COMMENT

The commentator agrees 100% with the author in his discussion of the significance of the fetal heart tones in ablatio placentae. We have on several occasions observed the fetal heart rate, along with the maternal symptoms, and made the diagnosis of ablatio placentae in time to save the baby. Early diagnosis in these cases is absolutely imperative if the fetal mortality is to be lowered.

Moral! When there is the least suspicion of ablatio placentae, "stick on the job" and listen to the fetal heart every few minutes until you can make the diagnosis—positive or negative. You will not be sorry because you will have saved a life—perhaps two lives. What a feeling of satisfaction permeates your soul when you have saved a life that is slowly ebbing away!

H. B. M.